# ATOMIC ENERGY CENTRAL SCHOOL NO.4

## RAWATBHATA

# ENGLISH LANGUAGE AND LITERATURE

## CONFIDENCE EXAMINATION-I 2019-2020

**Time Allowed: 3 hours** **Maximum Marks: 80**

**General Instructions:**

- This paper is divided into three sections: A, B and C. All questions are compulsory.
- Separate instructions are given with each section and question, wherever necessary. Read these instructions very carefully and follow them.
- Do not exceed the prescribed word limit while answering the questions.

**Section A**

1. **Read the passages given below and answer the questions that follow them: (8 marks)** **[8]**

Politics of coalition has become the ultimate truth of Indian politics these days. No doubt, a coalition gives the chance and pleasure of running a government, but in the course of time, temporal friendship, deceit and blackmailing turn out to be the cause of brutal termination of a coalition government.

The Indian society is divided into different religions, castes, sects and regional mindsets. There are regional parties having special zones for them. These small and regional groups never hesitate to indulge in the act of blackmailing for their own purpose. There is no discussion on the burning and relevant topics of national interest. These coalitions have become a severe headache for our nation. Their main ambition is to achieve power at any cost. The soul of India lies in the unity of its diverse culture but the main inspiration for the politics of coalition is to get easy access to the throne. The Indian culture aims at unifying its people of different sects while politics keeps an eye on dividing the Indian masses into castes, regions and religions.

In the early post-colonial period, ideologies were meant to unite different sects of people. Congress was a union of people from different points of view but the Communist Party, the Jansangh, and the Socialist Party were totally based upon their strong ideologies. They were quite dedicated to build a society, rather a nation, based upon nationalism, communalism or socialism. In order to strengthen their ideology among the party members, they used to organise special camps and sessions.

a. What type of government is the ultimate truth of Indian politics nowadays?
b. What is not a cause of brutal termination of a coalition government?
   (a) Temporal friendship
   (b) Deceit
   (c) Blackmailing
   (d) All of these
c. Regional parties blackmail the coalition government the most. (True/False)

d. These coalitions have become a _____ for our nation.
e. Whose main ambition is to achieve power at any cost?
f. What was the political ideology in the early post-colonial period?
g. What was the ideology of Congress?
h. Other parties were quite dedicated to build a society, rather a nation, based upon ____
   (a) nationalism
   (b) communalism
   (c) socialism
   (d) all of these

2. **Read the passage given below and answer the questions that follow:** **[12]**

Evelyn Glennie was born in 1965 and grew up on a farm near Aberdeen in Scotland. She loved playing music, and her ambition was to become a solo percussionist. She started having problems with her ears and began to lose her hearing. By the time she was twelve, she was deaf. She couldn't hear at all. Evelyn became very angry; it seemed to her that she would never fulfil her dream of being a great musician.

After a while Evelyn stopped being angry and instead found ways of adapting her playing to suit her deafness. At the age of sixteen, she became the first deaf student at the Royal Academy in London. She went on to make lots of CDs and is now famous for being the world's only full time solo percussionist. Evelyn likes to play unusual instruments and has over a thousand instruments some of which she has made herself. She likes to play with musicians from all over the world, and requests composers to create music especially for her. An example of this is a piece, which was composed for her by the jazz composer Diango Bates, for which kitchen pots and pans were used as instruments. Her sixteen solo albums (including twelve on the RCA/BMG label) have reached a remarkably diverse public, as have her numerous collaborations with musicians from the non-classical world.

Glennie contends that hearing is a form of touch, and that everyone, whether "deaf" or not, processes sound in an individual way. When Evelyn performs, she doesn't wear shoes or socks. This is to enable her to feel the music through the floor and her body. Usually, percussionists play at the back of the Orchestra, Evelyn plays at the front so that she can lip - read signals from the conductor. Glennie has said that she doesn't want an operation to cure her deafness; she likes being who she is and doesn't want to change the way she works. Like many other courageous people, she tries hard to help others. She has helped many deaf children by giving them an opportunity to learn a musical instrument.

**Answer any four of the following questions :**

a. What was Glennie's ambition?
b. Where and when was she born?
c. Why did she become very angry?
d. How did she stop herself from getting angry?
e. What is she now famous for?
f. Why does she not wear shoes or socks when she performs?

**Answer the following questions:**

a. What is meant by the word, 'ambition'?(Para 1)

i. goal in life
ii. hope
iii. employment
iv. success

b. Find the word opposite in meaning to 'happy'.

i. solo
ii. angry
iii. hearing
iv. helpless

c. What is meant by the word 'unusual'?(para 2)

i. uncommon
ii. unknown
iii. employment
iv. uncover

d. Find the word opposite in meaning to 'disable'.

i. enable
ii. retain
iii. keep
iv. draw

**Section B**

3. Owing to the MCD employees' strike, the roads in your area are littered with garbage. Not only the place is stinking but also is a health hazard. As Miki/Manish of 112, Laxmi Nagar, write a letter to the editor of a local newspaper informing the concerned authorities of the unhygienic conditions and requesting them to take appropriate and necessary action in the matter. **[8]**

OR

Telephone is one of the most important devices today. But it has also become a nuisance for some. Write an article on the topic 'Telephone is a Nuisance' in not more than 100-150 words.

4. Complete the following story in 150-200 words. The beginning of the story is given below: **[10]**

| |
|---|
| On my way to school I usually see a beggar on the roadside Yesterday on my way back, I did not see him there.<br>Walking further I saw him limping slowly. Out of idle curiosity I followed him. Soon I found……. |

OR

Complete the story in 150-200 words where the beginning is given below:

| |
|---|
| It was her friend's birthday. Mansi was very happy. She was going to attend such a party for the first time in her life. But she was facing a difficulty…… |

5. **Read the passage given below and fill in the blanks by choosing the most appropriate words from the given options**. **[4]**

We are living in a world (a) _____ every girl wants to be a diva and every boy (b) _____ to be called a dude. Today, your social acceptance is measured by your friends' list (c) _____ a social networking site. But a true friend is the one (d) _____ helps you in need.

a. (i) by (ii) that (iii) where (iv) the

b. (i) desire (ii) desires (ill) desiring (iv) desired

c. (i) in (ii) on (iii) at (iv) for

d. (i) which (ii) that (iii) who (iv) some

6. **The following passage has not been edited. There is an error in each line against which a blank has been given. Write the incorrect word and the correction in your answer-sheet against the correct blank number. Remember to underline the word that you have supplied.** **[4]**

| | | Error | Correction |
|---|---|---|---|
| If your children is overweight, | (a) | _____ | _____ |
| avoids fruits but vegetables, | (b) | _____ | _____ |
| and prefers computer games than real | (c) | _____ | _____ |
| ones, you should being concerned. | (d) | _____ | _____ |

7. **Rearrange the words / phrases given below to form meaningful sentences. Write your answers in the answer sheet against the correct numbers:** **[4]**

a. beautiful / are / reptiles / snakes

b. their / graceful / compare / are / movements / beyond / and

c. advantages / several / as pets / snakes / have

d. not / are / snakes / poisonous / some

**Section C**

8. **Read the following extracts and answer the question/complete the sentences that follow:** **[4]**

He stalks in his vivid stripes
The few steps of his cage
On pads of velvet quiet,
In his quiet rage.

a. What are the two qualities of the animal under reference?

b. Why does he move only a few steps?

c. Pick out the word from the stanza that means the same as 'clear'.

d. Who has written the above lines?

OR

**Read the passage given below and answer the questions that follow it: (4 marks)**

Inside the clouds, everything was suddenly black. It was impossible to see anything outside the aeroplane. The old aeroplane jumped and twisted in the air. I looked at the compass. I couldn't believe my eyes: the compass was turning round and round and round. It was dead. It would not work! The other instruments were suddenly dead, too. I tried the radio.

a. Why was it impossible to see anything outside the aeroplane?

b. What was the condition of the compass?

c. Find out a word similar in meaning to 'plunged'.

d. Why was the writer surprised?

9. Answer any five of the following questions in 30-40 words each: **[10]**

a) What ‘twin obligations’ does Mandela mention?

b) Why did Mr. Petronski write a letter to the school teacher?

c) Who was Gautama Buddha? When and where was he born?

d) What did Mrs. Pumphrey do when Tricki was in the hospital?

e) What did Ausable do when he saw Max with a pistol?

f) Who was Griffin? Why did he become a homeless wanderer?

10. Write the character sketch of Anne highlighting intelligence and politeness. **[8]**

OR

"Never mind", she said, "I can get on by myself." "You don't have to help me," said Valli to the conductor. She shows extraordinary courage in making the bus journey all alone. Taking inspiration from Valli's character, write how the ability and courage to take risk are essential to fulfil one's dream.

11. Griffin was a talented scientist but he misused his invention. The lesson we learnt from his example is that the misuse of a scientific discovery could play havoc with humanity. Explain. **[8]**

OR

"Don't you worry, Pitaji! In your old age, I will serve you and mother." Through the statement, the narrator wants to highlight moral values Bholi was imbued with. Based on the reading of the lesson, what makes Bholi aware of her rights and how does she use them?

# ATOMIC ENERGY CENTRAL SCHOOL NO.4

## RAWATBHATA

## Class 10, MATHEMATICS (Standard)

### CONFIDENCE EXAMINATION-I 2019-2020

**Time Allowed: 3 hours** **Maximum Marks: 80**

**General Instructions:**

1. All the questions are compulsory.
2. The question paper consists of 40 questions divided into 4 sections A, B, C, and D.
3. Section A comprises of 20 questions of 1 mark each. Section B comprises of 6 questions of 2 marks each. Section C comprises of 8 questions of 3 marks each. Section D comprises of 6 questions of 4 marks each.
4. There is no overall choice. However, an internal choice has been provided in two questions of 1 mark each, two questions of 2 marks each, three questions of 3 marks each, and three questions of 4 marks each. You have to attempt only one of the alternatives in all such questions.
5. Use of calculators is not permitted.

**Section A**

1. If 'a' and 'b' are both positive rational numbers, then $(\sqrt{a}+\sqrt{b})(\sqrt{a}-\sqrt{b})$ will be **[1]**

   a) neither rational nor rational number b) a rational number

   c) an irrational number d) none of these

2. The mean of the data when $\sum f_i d_i = 435, \sum f_i = 30$ and a = 47.5 is **[1]**

   a) 47.5 b) 62

   c) 30 d) 63

3. The hypotenuse of a right triangle is 6m more than twice the shortest side. The third side is 2m less than the hypotenuse. The representation of the above situation in the form of a quadratic equation is **[1]**

   a) $(2x+6)^2 = x^2 + (2x+4)^2$ b) $(2x+6)^2 + x^2 = (2x+4)^2$

   c) $(2x+6)^2 = x^2 - (2x+4)^2$ d) None of these

4. If sin A + 2 cos A = 1, then the value of 2 sin A – cos A is **[1]**

   a) 2 b) 0

   c) – 2 d) 1

5. $\frac{1+\tan^2\theta}{\sec^2\theta}$ = **[1]**

   a) $\sec^2\theta$ b) 1

   c) $\frac{1}{\sin^2\theta - \cos^2\theta}$ d) $\frac{1}{3}$

6. In a right $\Delta XYZ$ , XZ is the hypotenuse of length 12 cm and $\angle X = 45^\circ$. The area of the triangle is **[1]**

a) $72cm^2$ b) $12cm^2$

c) $24cm^2$ d) $36cm^2$

7. The co – ordinates of the mid – point of the line joining the points (3p, 4) and ( – 2, 4) are (5, p). The value of 'p' is **[1]**

a) 1 b) 4

c) 2 d) 3

8. The base of an equilateral triangle ABC lies on the y-axis. The coordinates of the point C is (0, – 3). If origin is the midpoint of BC, then the coordinates of B are **[1]**

a) (3, 0) b) (0, – 3)

c) (– 3, 0) d) (0, 3)

9. If P(E) = 0.05, what will be the probability of 'not E'? **[1]**

a) 0.55 b) 0.59

c) 0.95 d) 0.095

10. Raju bought a fish from a shop for his aquarium. The shop keeper takes out one fish from a tank containing 15 male fish and 18 female fish. The probability that the fish taken out is a male fish is **[1]**

a) $\frac{5}{11}$ b) $\frac{6}{11}$

c) $\frac{5}{12}$ d) $\frac{7}{11}$

11. Fill in the blanks: **[1]**

The length of the diagonal of a cuboid of dimensions 5cm by 4cm by 3cm is _____.

12. Fill in the blanks: **[1]**

The remainder when $x^4 + x^3 - 2x^2 + x + 1$ is divided by x - 1 is _____.

OR

Fill in the blanks:

The number of zeroes of the cubic polynomial $x^3 - 3x^2 - x + 3$ is _____.

13. Fill in the blanks: **[1]**

△ABC and △DEF are similar and $AB = \frac{1}{3}DE$, then ar(△ABC): ar(△DEF) is _____.

14. Fill in the blanks: **[1]**

The 45th term of an AP, with first term 15 and common difference -2 is _____.

15. Fill in the blanks: **[1]**

The coordinates of the point, where the line x - y = 5 cuts y-axis is _____.

16. If least prime factor of a is 3 and least prime factor of b is 7, what is least prime factor of (a + b)? **[1]**

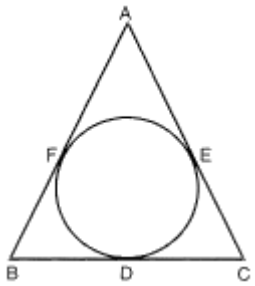
17. $\Delta ABC$ and $\Delta DEF$ are similar and $AB = \frac{1}{3}DE$, then find $ar(\Delta ABC) : ar(\Delta DEF)$ **[1]**

18. Write down the first four terms of the sequences whose general terms are $T_n = 2n + 3$. **[1]**

OR

How many three-digit numbers are divisible by 9?

19. A triangle ABC is drawn to circumscribe a circle. If AB = 13 cm, BC = 14 cm and AE = 7 cm, then find AC. **[1]**




20. If the quadratic equation $px^2 - 2\sqrt{5}px + 15 = 0$ has two equal roots then find the value of p. **[1]**

**Section B**

21. A coin is tossed 3 times. List the possible outcomes, find the probability of getting **[2]**

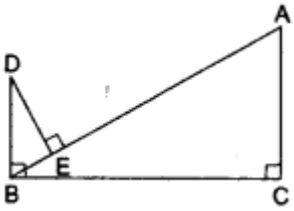
i. all heads

ii. at least two heads

22. Find the roots of the following Quadratic Equation by factorization: $2x^2 + x - 6 = 0$ **[2]**

23. In the given figure, $DB \perp BC$, $DE \perp AB$ and $AC \perp BC$. **[2]**

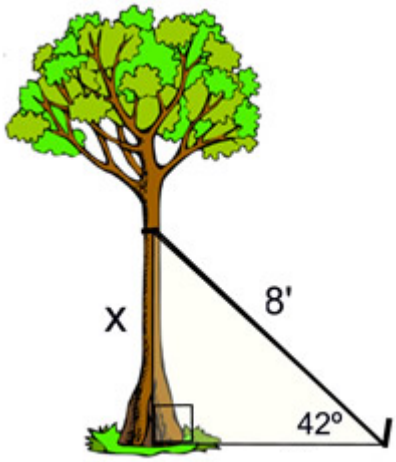
Prove that $\frac{BE}{DE} = \frac{AC}{BC}$




OR

$\triangle$ABD is a right triangle right-angled at A and AC$\perp$ BD. Show that $\frac{AB^2}{AC^2} = \frac{BD}{DC}$

24. A nursery plants a new tree and attaches a guy wire to help support the tree while its roots take hold. An eight-foot wire is attached to the tree and to a stake in the ground. From the stake in the ground the angle of elevation of the connection with the tree is 42º. **[2]**



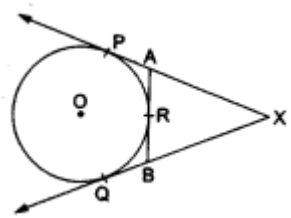

i. Find to the *nearest tenth of a foot*, the height of the connection point on the tree.

ii. If the angle of elevation changes to 30º, keeping the height of the connection point on the tree same as calculated in (i), what should be the length of the wire?

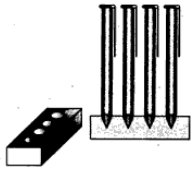
25. Show that tangent lines at the end points of a diameter of a circle are parallel. **[2]**

OR

In the given figure, XP and XQ are two tangents to the circle with centre O, drawn from an external point X. ARB is another tangent, touching the circle at R. Prove that XA +AR = XB + BR.




26. A carpenter in the small town of Bareilly used to make and sell different kinds of wood items like a rectangular box, cylindrical pen stand, and cuboidal pen stand. One day a student came to his shop and asked him to make a pen stand with the dimensions as follows: **[2]**
A pen stand should be in the shape of a cuboid with four conical depressions to hold pens. The dimensions of the cuboid should be 15 cm by 10 cm by 3.5 cm. The radius of each of the depressions is 0.5 cm and the depth is 1.4 cm.



By using the above-given information, find the following:

i. The volume of the cuboid.

ii. The volume of wood in the entire stand.

**Section C**

27. Define HCF of two positive integers and find the HCF of the pairs of numbers: 56 and 88. **[3]**

OR

Find HCF and LCM of 404 and 96 and verify that HCF $\times$ LCM = Product of the two given numbers.

28. Determine the general term of an A.P. whose $7^{th}$ term is -1 and $16^{th}$ term 17. **[3]**

29. If we buy 2 tickets from station A to station B, and 3 from station A to station C, we have to pay Rs. 795. But 3 tickets from station A to B and 5 tickets from A to C cost a total of Rs. 1300. what is the fare from station A to B and that from station A to C ? **[3]**

OR

Use elimination method to find all possible solutions of the following pair of linear equations ax + by - a + b = 0 and bx - ay - a - b = 0

30. If the zeroes of the polynomial f(x) = $x^3$ - $3x^2$ + x + 1 are a - b, a, a + b, find a and b. **[3]**

31. If A (-1, 3), B (1, -1) and C (5,1) are the vertices of a triangle ABC, find the length of the median through A. **[3]**

32. If $\cos\theta = \frac{8}{17}$, find the other five trigonometric ratios. **[3]**

OR

Prove the trigonometric identity:

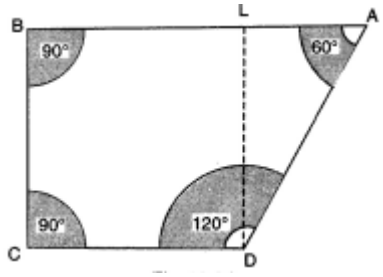
if $\sin\theta + \cos\theta = x$, prove that $\sin^6\theta + \cos^6\theta = \frac{4-3\left(x^2-1\right)^2}{4}$

33. ABCD is a field in the shape of a trapezium. $AB \| DC$ and $\angle$ABC = 90°, $\angle$DAB = 60°. Four sectors are formed with centres A, B, C and D in the given figure. The radius of each sector is 17.5 m. Find the **[3]**

i. total area of the four sectors.

ii. area of the remaining portion.

Given that AB = 75 m and CD = 50 m




34. Complete mean of the grouped data: **[3]**

| **Monthly Salary** | **Number of persons** |
|---|---|
| 325.5 - 350.5 | 20 |
| 350.5 - 375.5 | 10 |
| 375.5 - 400.5 | 10 |
| 400.5 - 425.5 | 5 |
| 425.5 - 450.5 | 1 |
| 450.5 - 475.5 | 2 |
| 475.5 - 500.5 | 2 |

**Section D**

35. Construct an isosceles triangle whose base is 8 cm and altitude 4 cm and then construct another triangle whose sides are $\frac{3}{4}$ times the corresponding sides of the isosceles triangle. **[4]**

OR

Draw a circle of radius 6 cm. Draw a tangent to this circle making an angle of 30° with a line passing through the centre.

36. Prove that ratio of areas of two similar triangles is equal to the ratio of square of their corresponding sides **[4]**

37. The area of a rectangle gets reduced by 9 square units, if its length is reduced by 5 units and the breadth is increased by 3 units. The area is increased by 67 square units if length is increased by 3 units and breadth is increased by 2 units. Find the perimeter of the rectangle. **[4]**

OR

The sum of a two-digit number and the number formed by reversing the order of digits is 66. If the two digits differ by 2, find the number. How many such numbers are there?

38. A farmer connects a pipe of internal diameter 20 cm from a canal into a cylindrical tank in his field, which is 10 m in diameter and 2 m deep. If water flows through the pipe at the rate of 3 km/ hr, in how much time will the tank be filled ? **[4]**

OR

An open metallic bucket is in the shape of a frustum of a cone mounted on hollow cylindrical base made of metallic sheet. If the diameters of the two circular ends of the bucket are 45 cm and 25 cm, the total vertical height of the bucket is 30 cm and that of the cylindrical portion is 6 cm, find the

area of the metallic sheet used to make the bucket. Also, find the volume of the water it can hold. (Take $\pi$ = 22/7).

39. An aeroplane when flying at a height of 3000 metres from the ground passes vertically above another aeroplane at an instant when the angles of elevation of the two planes from the same point on the ground are $60^\circ$ and $45^\circ$ respectively. Find the vertical distance between the aeroplanes at that instant. [Take $\sqrt{3}$=1.732] **[4]**

40. The following table gives production yield per hectare of wheat of 100 farms of a village: **[4]**

| **Production yield(kg/ha)** | 40 - 45 | 45 - 50 | 50 - 55 | 55 - 60 | 60 - 65 | 65 - 70 |
|---|---|---|---|---|---|---|
| **Number of farms** | 4 | 6 | 16 | 20 | 30 | 24 |

Change the distribution to a 'more than' type distribution and draw its Ogive.

# ATOMIC ENERGY CENTRAL SCHOOL NO.4

**RAWATBHATA**

## CLASS 10 - MATHEMATICS (Basic)

### Confidence Test (2019-20)

**Time Allowed: 3 hours** **Maximum Marks: 80**

**General Instructions:**

1. All questions are compulsory
2. The question paper consists of 40 questions divided into four sections A, B, C & D.
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4. There is no overall choice. However internal choices have been provided in two questions of 1 mark each, two questions of 2 marks each, three questions of 3 marks each and three questions of 4 marks each. You have to attempt only one of the alternatives in all such questions.
5. Use of calculators is not permitted.

**Section A**

1. $(1+\sqrt{2})+(1-\sqrt{2})$ is **[1]**

   a) a rational number b) a non-terminating decimal

   c) None of these d) an irrational number

2. The least positive integer divisible by 20 and 24 is **[1]**

   a) 480 b) 240

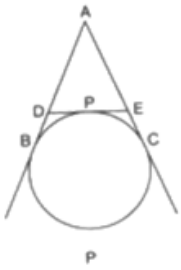
   c) 360 d) 120

3. The exponent of 3 in the prime factorization of 864 is: **[1]**

   a) 2 b) 3

   c) 4 d) 8

4. In the given figure, AB = 8 cm. If PE = 3 cm, then the measure of AE is **[1]**




   a) 3 cm b) 11 cm

   c) 5 cm d) 7 cm

5. If $\sum f_i = 15,\ \sum f_i x_i = 3p + 36$ and the mean of the distribution is 3, then the value of 'p' is **[1]**

a) 5 b) 2

c) 4 d) 3

6. A bag contains 6 red, 8 white, 4 green and 7 black balls. One ball is drawn at random. The probability that the ball drawn is neither green nor white is **[1]**

a) $\frac{8}{25}$ b) $\frac{12}{25}$

c) $\frac{13}{25}$ d) $\frac{4}{25}$

7. The third zero of the polynomial$x^3 + 7x^2 - 2x - 14$, if two of its zeroes are $\sqrt{2}$ and $-\sqrt{2}$, is **[1]**

a) – 14 b) 7

c) – 7 d) 14

8. If one of the zeroes of the quadratic polynomial $14x^2 - 42k^2x - 9$ is negative of the other, then the value of 'k' is **[1]**

a) 3 b) 0

c) 1 d) 2

9. The centroid of a triangle whose vertices are $(x_1, y_1)$, $(x_2, y_2)$ and $(x_3, y_3)$ is given by **[1]**

a) $\left(\frac{x_1+x_2+x_3}{6}, \frac{y_1+y_2+y_3}{6}\right)$ b) $\left(\frac{x_1+x_2+x_3}{2}, \frac{y_1+y_2+y_3}{2}\right)$

c) $\left(\frac{x_1+x_2+x_3}{4}, \frac{y_1+y_2+y_3}{4}\right)$ d) $\left(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3}\right)$

10. The co – ordinates of the point which divides the join of ( – 6, 10) and (3, – 8) in the ratio 2 : 7 is **[1]**

a) (4, – 6) b) ( – 4, 6)

c) (1, – 3) d) ( – 1, 3)

11. Fill in the blanks: **[1]**

The mid point of p(-5, 0) and q(5, 0) is _____.

12. Fill in the blanks: **[1]**

The pair of linear equations y = 0 and y = -5 has _____ solutions.

OR

Fill in the blanks:

If a pair of linear equation is consistent, then the lines will be _____.

13. Fill in the blanks: **[1]**

If A and B are acute angles and tan A = cot B, then the value of (A + B) is _____.

14. Fill in the blanks: **[1]**

If tan θ =$\sqrt{3}$, then sec θ = _____.

15. Fill in the blanks: **[1]**

All _____ triangles are similar.

16. Evaluate sin 45° sin 30° + cos 45° cos 30°. **[1]**

OR

Prove the trigonometric identity:

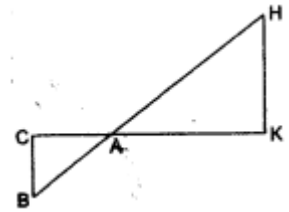
$\operatorname{cosec}\theta\sqrt{1 - \cos^2\theta} = 1$

17. The diameters of two circles with centre A and B are 16 cm and 30 cm respectively. If area of another circle with centre C is equal to the sum of areas of these two circles, then find the **[1]**

circumference of the circle with centre C.

18. In a simultaneous throw of a pair of dice, find the probability that 2 will not come either time. **[1]**

19. In the adjoining figure, $\triangle AHK$ is similar to $\triangle ABC$. If AK = 10 cm, BC = 3.5 cm and HK = 7 cm, find AC. **[1]**




20. What is the sum of first 20 odd natural numbers? **[1]**

**Section B**

21. Harpreet tosses two different coins simultaneously. What is the probability that she gets: **[2]**

i. at least one head?

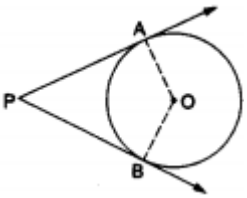
ii. one head and one tail?

22. There are 1000 sealed envelopes in a box, 10 of them contain a cash prize of Rs 100 each, 100 of them contain a cash prize of Rs 50 each and 200 of them contain a cash prize of Rs 10 each and rest do not contain any cash prize. If they are well shuffled and an envelope is picked up out, what is the probability that it contains no cash prize? **[2]**

23. PQ is a tangent drawn from a point P to a circle of centre O and QOR is a diameter of the circle such that $\angle$POR = 110°, Find $\angle$OPQ. **[2]**

OR

In the given figure, O is the centre of the circle. PA and PB are tangents. Show that AOBP is a cyclic quadrilateral.

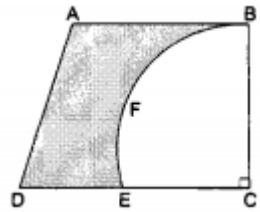



24. If tan A = $\sqrt{2}-1$, show that $\frac{\tan A}{1+\tan^2 A} = \frac{\sqrt{2}}{4}$ **[2]**

OR

Prove the identity, where the angles involved are acute angles for which the expressions are defined: $\sqrt{\frac{1+\sin A}{1-\sin A}} = \sec A + \tan A$

25. From a thin metallic piece in the shape of a trapezium ABCD in which $AB \| CD$ and $\angle BCD$ = 90°, a quarter circle BFEC is removed. Given, AB = BC =CE= 3.5 cm and DE = 2 cm, calculate the area of remaining (shaded) part of metal sheet. **[2]**




26. In the class test of mathematics, a teacher asked his students to write different kinds of polynomials. 6 students wrote the following polynomials. Identify the type of polynomials written by these students: **[2]**

i. f(p) = 3 - $p^2$ + $\sqrt{7}$p

ii. $p(v) = \sqrt{3}v^4 - \frac{2}{3}v + 7$

iii. $q(x) = \frac{\sqrt{2}}{5}x^3 + 1$

iv. $p(z) = \sqrt{5}z + 2\sqrt{2}$

v. $r(t) = \frac{-t+3t^2-4t^3}{t}$

## Section C

27. Find the zeroes of the quadratic polynomial $3x^2$- 2 and verify the relationship between the zeroes and the coefficients. **[3]**

28. Draw a circle of radius 4 cm. From a point X, 9 cm away from the centre of the circle, draw two tangents to the circle. Also, measure the lengths of the tangents. **[3]**

OR

Divide a line segment of length 10 cm internally in the ratio 3: 2.

29. A toy is in the form of a hemisphere surmounted by a right circular cone of the same base radius as that of the hemisphere. If the radius of base of the cone is 21 cm and its volume is $\frac{2}{3}$ of the volume of the hemisphere, calculate the height of the cone and the surface area of the toy. **[3]**

30. Prove the identity: **[3]**

$2(\sin^6\theta + \cos^6\theta) - 3(\sin^4\theta + \cos^4\theta) + 1 = 0$

OR

Without using trigonometric tables, evaluate the following:

$\frac{\sec 39^\circ}{\operatorname{cosec} 51^\circ} + \frac{2}{\sqrt{3}}$ tan17° tan38° tan60° tan52° tan73° -3($\sin^2$31° + $\sin^2$59°)

31. Find the LCM of the following polynomials:$a^8 - b^8$ and $\left(a^4 - b^4\right)(a + b)$ **[3]**

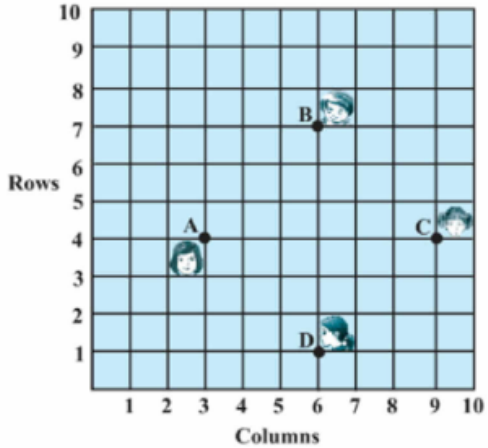
OR

Use Euclid's division algorithm to find the HCF of 441, 567 and 693.

32. In an isosceles triangle ABC in which AB = AC = 6 cm is inscribed in a circle of radius 9 cm, find the area of the triangle. **[3]**

33. Read the following passage and answer the question that follows: **[3]**

In a class room, four student Sita, Gita, Rita and Anita are sitting at A(3, 4), B(6, 7), C(9, 4), D(6, 1) respectively. Then a new student Anjali joins the class.




i. Teacher tells Anjali to sit in the middle of the four students. Find the coordinates of the position where she can sit.

ii. Calculate the distance between Sita and Anita.

iii. Which two students are equidistant from Gita.

34. Represent the following pair of linear equations graphically and hence comment on the condition of consistency of this pair. **[3]**

x - 5 y = 6, 2x- 10y = 12

**Section D**

35. Solve for x: **[4]**

$\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} = \frac{2}{3}; x \neq 1, 2, 3$

36. The sum of 5th and 9th terms of an AP is 72 and the sum of 7th and 12th terms is 97. Find the AP. **[4]**

OR

If 1 + 4 + 7 + 10....+ x = 287, find the value of x.

37. The angles of depression of the top and bottom of an 8 m tall building from top of a multistoreyed building are $30^o$ and $45^o$, respectively. Find the height of multi-storeyed building and distance between two buildings. **[4]**

38. In an equilateral triangle ABC the side BC is trisected at D. Prove that 9 $AD^2$ = 7 $AB^2$ **[4]**

OR

D and E are points on the sides AB and AC respectively of $\Delta$ABC such that $DE \| BC$ and divides $\Delta$ABC into two parts, equal in area, Find $\frac{BD}{AB}$.

39. A cylindrical pipe has inner diameter of 7 cm and water flows through it at 192.5 litres per minute. Find the rate of flow in kilometres per hour. **[4]**

OR

Water is flowing at the rate of 15 km/hr through a cylindrical pipe of diameter 14 cm into a cuboidal pond which is 50 m long and 44 m wide. In what time the level of water in pond rise by 21 cm?

40. Draw "less than ogive" and "more than ogive" for the following distribution and hence find its median : **[4]**

| **Class** | 20 - 30 | 30 - 40 | 40 - 50 | 50 - 60 | 60 - 70 | 70 - 80 | 80 - 90 |
|---|---|---|---|---|---|---|---|
| **Frequency** | 10 | 8 | 12 | 24 | 6 | 25 | 15 |

# ATOMIC ENERGY CENTRAL SCHOOL NO.4

## RAWATBHATA

# SCIENCE

## CONFIDENCE EXAMINATION-I 2019-2020

**Time Allowed: 3 hours** **Maximum Marks: 80**

**General Instructions:**

1. The question paper comprises three sections – A, B and C. Attempt all the sections.
2. All questions are compulsory.
3. Internal choice is given in each section.
4. All questions in Section A are one-mark questions comprising MCQ, VSA type and assertion-reason type questions. They are to be answered in one word or in one sentence.
5. All questions in Section B are three-mark, short-answer type questions. These are to be answered in about 50 - 60 words each.
6. All questions in Section C are five-mark, long-answer type questions. These are to be answered in about 80 – 90 words each.
7. This question paper consists of a total of 30 questions.

**Section A**

1. $CaO + H_2O \rightarrow Ca(OH)_2$ the type of reaction is **[1]**

   a) combination reaction b) displacement reaction

   c) decomposition reaction d) precipitation reaction

   OR

   Which gases are given out when Lead nitrate is heated?

   a) $NO_2$ , $O_2$ b) $N_2O_4$ , $O_2$

   c) PbO , $O_2$ d) NO , $O_3$

2. The basic nature of sodium hydroxide (NaOH) is due to the presence of _____ in solution. **[1]**

   a) Hydrogen ions b) Sodium ions

   c) Chloride ions d) Hydroxide ions

3. 10 mL of a solution of NaOH is found to be completely neutralized by 8 mL of a given solution of HCl. If we take 20 mL of same solution of NaOH, the amount of HCl solution required to neutralize it will be **[1]**

   a) 12 mL b) 16 mL

   c) 8 mL d) 4 mL

4. State two ways of reducing or stopping the corrosion of metals. **[1]**

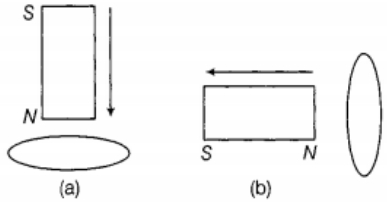
5. What is calcination? **[1]**
6. Name the second member of the alkyne family. Give its structure. **[1]**
7. Write the IUPAC names of the following: **[1]**

   (i) $CH_3OH$

   (ii) $CH_3COOH$
8. What is chlorophyll? **[1]**
9. Name the tissue through which water and minerals are transported in plants. **[1]**
10. Name the hormone which prepares the body to meet any emergency situation. **[1]**
11. Why is it advised to use iodised salt in the diet? **[1]**
12. Name a tubular passage for the exit of sperms and urine in mammals. **[1]**
13. What is the function of the umbilical cord? **[1]**
14. Which type of organism will have more variations sexually or asexually reproducing organisms? Justify. **[1]**
15. A person is advised to wear spectacles with convex lenses. What types of defect of vision is he suffering from? **[1]**
16. How is a voltmeter connected in the circuit to measure potential difference between two points? **[1]**

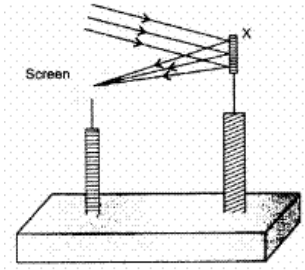
    OR

    What constitutes the current ?
17. Give the direction of induced current in the following figure. **[1]**




18. In the following food chain, 20J of energy was available to the hawks. How much would have been present in the plants? **[1]**

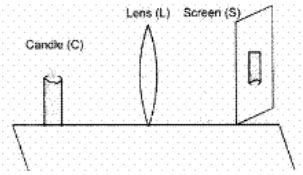
    Plants $\rightarrow$ rats $\rightarrow$ snakes $\rightarrow$ hawks
19. A student determines the focal length of a device X, by focusing the image of a far off object on the screen positioned as shown in the figure below: **[1]**




    The device X is a :

    a) Convex lens
    b) Concave mirror
    c) Concave lens
    d) Convex lens
20. A student performs an experiment on finding the focal length of a convex lens by keeping a lighted candle on one end of laboratory table, a screen on its other end and the lens between them as shown in the figure. The positions of the three are adjusted to get a sharp image of the candle flame on the screen.If now the candle flame were to the replaced by a distant lamp on **[1]**

a far away electric pole, the student would be able to get a sharp image of this distant lamp on the screen by moving




a) the screen in the direction of the lens or the lens away from the screen

b) neither the screen nor the lens

c) the screen in the direction of the lens or the lens in the direction of the screen

d) the screen away fro the lens or the lens in the direction of the screen

**Section B**

21. What is the difference between combination and decomposition reactions? Write an equation of each type. **[3]**

22. Write the chemical formula of bleaching powder. How is bleaching powder prepared? For what purpose it is used in drinking water? **[3]**

OR

A road tanker carrying an acid was involved in an accident and its contents spilled on the road. At the side of the road iron drain cover began melting and fizzing as the acid ran over them. A specialist was called to see if the acid actually leaked into the nearby river.

(a) Explain why specialist could carry out sample test to see of the river water contains some acid or not (b) Suggest a better report name for the word 'melting'

(c) Explain why the drain covers began fizzing as the acid ran over them.

23. State which of the following chemical reactions will take place or which will not, giving suitable reason for each? **[3]**

i. $Zn(s) + CuSO_4(aq) \rightarrow ZnSO_4(aq) + Cu(s)$

ii. $Fe(s) + ZnSO_4(ag) \rightarrow FeSO_4(aq) + Zn(s)$

iii. $Zn(s) + FeSO_4(ag) \rightarrow ZnSO_4(ag) + Fe(s)$

24. Explain the reactions of different metals with hot water, cold water and steam. Give one example with a proper balanced chemical equation. Name two metals which do not react with any form of water. **[3]**

25. Explain the ways in which glucose is broken down in absence or shortage of oxygen. **[3]**

26. Discuss the mode of nutrition in amoeba. **[3]**

27. In a monohybrid cross, pink coloured flowers are dominant over white coloured flowers. If parent plants belong to pure breeding dominant trait and pure breeding recessive trait, what will be the phenotype or morphological feature of $F_1$-generation? If $F_1$ plants are self-fertilised, what would be the phenotypic ratio or how many dominant and recessive traits will be produced in the progeny? Explain with an illustration. **[3]**

OR

What are inherited traits? Give one example.

28. State the types of mirror preferred as (i) rear view mirror in vehicles, (ii) shaving mirror. **[3]**

Justify your answer two reason in each case.

29. Why don't two magnetic lines of force intersect each other? **[3]**

OR

Explain, why electric power transmitted at high voltages and low currents to distant places?

30. Why is improper disposal of waste a curse to environment? **[3]**

**Section C**

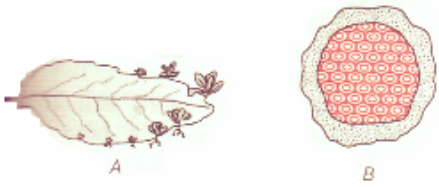
31. i. What are hydrocarbons? Give examples. **[5]**
    ii. Give the structural differences between saturated and unsaturated hydrocarbons with two examples each.
    iii. What is functional group? Give examples of four different functional groups.

OR

Differences between soaps and synthetic detergents.

32. What are hormones? State their role in the working of the human body.Or Define 'Hormone'. **[5]**
What are the general functions of 'hormones'?

**[5]**

33. 


    i. Identify the organisms A and B and the mode of asexual reproduction exhibited by them.
    ii. How will an organism be benefited if it reproduces through spores?
    iii. Mention the two asexual methods by which Hydra can reproduce. Explain briefly any one such method.

OR

What are the various evidences in favour of evolution?

34. An object is placed at a distance of 60 cm from a concave lens of focal length 30 cm. **[5]**
    i. Use the lens formula to find the distance of the image from the lens.
    ii. List four characteristics of the image (nature, position, size, erect/inverted) formed by the lens in this case.
    iii. Draw a ray diagram to justify your answer to the part(ii).

35. i. List three common refractive defects of vision. Suggest the way of correcting these defects. **[5]**
    ii. About 45 lac people in the developing countries are suffering from corneal blindness. About 30 lac children below the age of 12 yr suffering from this defect can be cured by replacing the defective cornea with the cornea of a donated eye. How and why can students of your age involve themselves to create awareness about this fact among people?

36. Explain the following: **[5]**
    a. Why is the tungsten used almost exclusively for filament of electric lamps?
    b. Why are the conductors of electric heating devices, such as bread-toasters and electric irons, made of an alloy rather than a pure metal?
    c. Why is the series arrangement not used for domestic circuits?
    d. How does the resistance of wire vary with its area of cross-section?
    e. Why are copper and aluminium wires usually employed for electric transmission?

# ATOMIC ENERGY CENTRAL SCHOOL NO.4

## RAWATBHATA

# SOCIAL SCIENCE

## CONFIDENCE EXAMINATION-I 2019-2020

**Time Allowed: 3 hours** **Maximum Marks: 80**

**General Instructions:**

1. The question paper has 35 questions in all.
2. Marks are indicated against each question.
3. Questions from serial number 1 to 20 are objective type questions. Each question carries one mark. Answer them as instructed.
4. Questions from serial number 21 to 28 are3 marks questions. Answer of these questions should not exceed 80 words each.
5. Questions from serial number 29 to 34 are 5 marks questions. Answer of these questions should not exceed 120 words each.
6. Question number 35 is a map question of 6 marks with two parts - 35 a. from History (2 marks) and 35b. from Geography (4 marks).

**Section A**

1. Match the following: **[1]**

| | |
|---|---|
| (a) This traveller brought back the art of woodblock painting to Italy | (i) William Bentinck |
| (b) The publisher of Folk tales in Germany | (ii) Marco Polo |
| (c) He was a liberal colonial officer who formulated new rules to restore the freedom of the press in India | (iii) James Augustus Hicky |
| (d) He was the pioneer of the press in India | (iv) Grimm brothers |

2. Why did production of Indian textiles and handloom go up during the Non- Cooperation Movement? **[1]**

   a) All of these
   b) Foreign cloth was burnt in huge bonfires
   c) The import of foreign clothes was halved and the value dropped from Rs 102 crores to Rs 57 crores
   d) People discarded imported clothes and wore only Indian ones

3. Which among the following is an autobiography of Rashundari Devi **[1]**

   a) Amar Jawan
   b) Amar zindagi
   c) AmarJyoti
   d) Amar Jiban

4. When was the first jute mill established in India? **[1]**

5. Identify the type of resources classified on the basis of exhaustibility. **[1]**

a) individual and community
b) Renewable and non-renewable
c) Biotic and abiotic
d) Potential and developed resources

6. Which type of farming is intensive subsistence farming? **[1]**

7. Name the minerals formed in beds and layers. **[1]**

8. Correct the following statement and rewrite: **[1]**

Hinduism is the state religion of Sri Lanka.

9. _____List includes subjects of national importance. **[1]**

a) State
b) Concurrent
c) Union
d) residuary

10. Fill in the blanks: **[1]**

The women's movement is called _____.

OR

Fill in the blanks:

Heredity, rituals, birth are the basis of _____.

11. In what way are religious differences beneficial? **[1]**

OR

How many languages are spoken in India and what is the ratio of Hindi speaking people in India?

12. Why currency is important for a nation? **[1]**

13. What is per capita income? **[1]**

a) Whole income
b) Average income
c) National income
d) State’s income

14. Fill in the blanks: **[1]**

MNCs choose to set up production close to the availability of _____.

15. Which of the following activity is not from the tertiary sector ? **[1]**

a) Construction of houses
b) Trading
c) Lawyers
d) Teaching

16. Fill in the blanks: **[1]**

The _____ is the total income of the country divided by its total population.

OR

Fill in the blanks:

Countries like _____ depend on importing oil from abroad because they do not have enough stocks of their own.

17. Identify the incorrect option from the given statement: **[1]**

a) Collateral is an asset that the lender owns and uses this as a guarantee to a lender until the loan is repaid.
b) Property such as land titles, deposits with banks, livestock are collateral used for borrowing.
c) Interest rate, collateral and
d) If the borrower fails to repay the

documentation requirement, and the mode of repayment together comprise what is called the terms of credit.

loan, the lender has the right to sell the asset or collateral to obtain payment.

18. Correct the following statement and rewrite: **[1]**

Man made products are changed into other forms in the secondary sector.

19. **Assertion (A):** The tertiary sector is also called the manufacturing sector. **[1]**

**Reason (R) :** Since tertiary sector activities generate services rather than goods.

a) Assertion is INCORRECT but, reason is CORRECT.

b) Both assertion and reason are CORRECT and reason is the CORRECT explanation of the assertion.

c) Both assertion and reason are CORRECT but, reason is NOT THE CORRECT explanation of the assertion.

d) Assertion is CORRECT but, reason is INCORRECT.

20. Identify the incorrect option from the following statement: **[1]**

a) In the formal sector, RBI supervises their function of giving loans.

b) The rate of interest in the formal sector is lower than that of the informal sector loans.

c) Collateral is required to obtain credit in the formal sector.

d) The main motive of the formal sector is making only profit.

**Section B**

21. Explain the effects of 'worldwide economic depression' on India, towards the late 1920s. **[3]**

OR

Why did the Rich peasant communities become active in the Civil Disobedience Movement?

22. Why were Corn Laws introduced and later abolished in Britain in the late eighteenth century? **[3]**

OR

Who were Gomasthas? How did they help the East India Company to assert a monopoly of right to trade? Explain.

23. Read the sources given below and answer the questions that follow: **[3]**

**Source A:**

The Nineteenth Century Lending libraries had been in existence from the seventeenth century onwards. In the nineteenth century, lending libraries in England became instruments for educating white-collar workers, artisans and lower-middle-class people. Sometimes, self-educated working class people wrote for themselves. After the working day was gradually shortened from the mid-nineteenth century, workers had some time for self-improvement and self-expression. They wrote political tracts and autobiographies in large numbers.

**Source B:**

Further Innovations Nineteenth-century periodicals serialised important novels, which gave birth to a particular way of writing novels. In the 1920s in England, popular works were sold in cheap series. The dust cover or the book jacket is also a twentieth-century innovation. With

the onset of the Great Depression in the 1930s, publishers feared a decline in book purchases. To sustain buying, they brought out cheap paperback editions.

**Source C:**

Print and Censorship After the revolt of 1857, the attitude to freedom of the press changed. Enraged Englishmen demanded a clamp down on the 'native' press. As vernacular newspapers became assertively nationalist, the colonial government began debating measures of stringent control. In 1878, the Vernacular Press Act was passed, modelled on the Irish Press Laws. It provided the government with extensive rights to censor reports and editorials in the vernacular press. From now on the government kept regular track of the vernacular newspapers published in different provinces.

**Questions:**

**Source A:** Mention the technique adopted to educate white-collar workers in Europe during the 19th century.

**Source B:** What is Shilling Series?

**Source C:** How did the Vernacular Press Act strengthen the British government in India?

24. Name the mineral ore from which aluminium is extracted? Why is it gaining importance? Give its distribution in India. **[3]**

OR

Explain three factors that make mineral extractions commercially viable.

25. Mention any four difficulties of the local government in India. **[3]**

26. Name any six 'regional political parties' of the four southern states of India. **[3]**

27. "Whether credit would be useful or not, it depends on the situation". Give two different examples in support of this statement. **[3]**

OR

Why is modern currency accepted as a medium of exchange without any use of its own? Find out the reason.

28. Explain the ways by which more employment can be created in a country like India. **[3]**

**Section C**

29. Mention the obstacles in the way of the Italian Unification. **[5]**

OR

"Nationalism no longer retained its idealistic liberal democratic sentiment by the last quarter of the nineteenth century in Europe/' Analyse the statement with examples.

30. **Read the extract and answer the question that follows:** **[5]**

Ever since humans appeared on the earth, they have used different means of communication. But, the pace of change, has been rapid in modern times. Long-distance communication is far easier without the physical movement of the communicator or receiver. Personal communication and mass communication including television, radio, press, films, etc. are the major means of communication in the country.

Mass communication provides entertainment and creates awareness among people about various national programmes and policies. It includes radio, television, newspapers, magazines, books and films. All India Radio (Akashwani) broadcasts a variety of programmes in national, regional and local languages for various categories of people, spread over different parts of the country. Doordarshan, the national television channel of India, is one of

the largest terrestrial networks in the world. It broadcasts a variety of programmes from entertainment, educational to sports, etc. for people of different age groups.

India publishes a large number of newspapers and periodicals annually. They are of different types depending upon their periodicity. Newspapers are published in about 100 languages and dialects. India is the largest producer of feature films in the world. It produces short films; video feature films and video short films. The Central Board of Film Certification is the authority to certify both Indian and foreign films.

**Questions:**

1. Give the importance of mass communication.
2. Describe the nature and role of feature-films in India.
3. Distinguish between means of personal communication and mass communication.

31. Why was the cotton textile industry concentrated in the cotton growing belt in the early years? Explain. **[5]**

32. What was the reason of the Civil War in Sri Lanka? What was its impact on the country? **[5]**

33. Why is democracy not considered simply a rule of majority? **[5]**

OR

On the basis of which values will it be a fair expectation that democracy should produce a harmonious social life? Explain.

34. How are Multinational Corporations (MNCs) controlling and spreading their productions across the world? Explain. **[5]**

**Section D**

35. (a) Two places A and B have been marked on the given outline map of India. Identify them and write their correct names on the lines drawn near them **[6]**

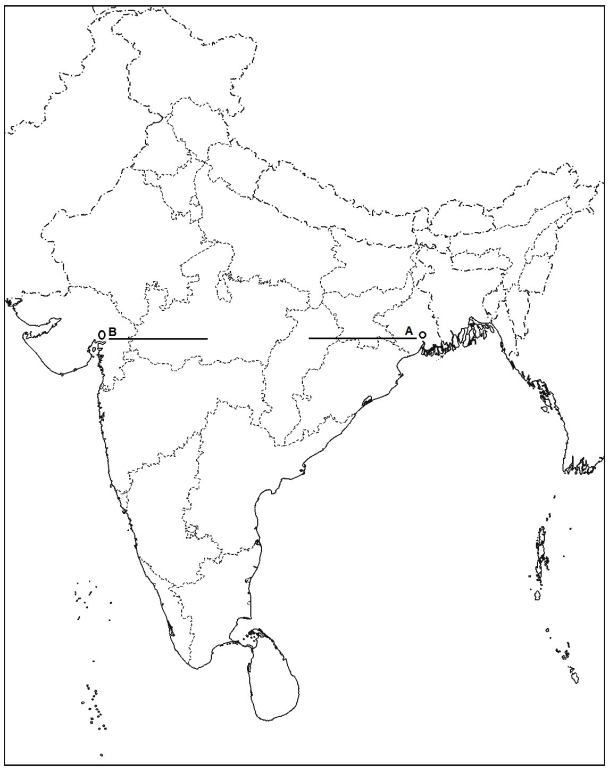
A. The place where Indian National Congress session was held in September, 1920.

B. The place associated with Peasant Satyagraha.

(b) On the same outline map of India locate and label any four of the following with suitable Symbols.

i. Marmagao - Major Sea Port
ii. Noida - Software Technology Park
iii. Durg – Iron ore mines
iv. Kalpakkam - Nuclear Power Plant
v. Hirakud – Dam
vi. Rajiv Gandhi - International Airport

INDIA – POLITICAL



# ATOMIC ENERGY CENTRAL SCHOOL NO.4

## RAWATBHATA

# HINDI A

## CONFIDENCE EXAMINATION-I 2019-2020

**Time Allowed: 3 hours** **Maximum Marks: 80**

**General Instructions:**

1. इस प्रश्न-पत्र में चार खंड हैं – क, ख, ग, और घ।
2. सभी खंडों के प्रश्नों के उत्तर देना अनिवार्य है।
3. यथासंभव प्रत्येक खंड के प्रश्नों के उत्तर क्रम से लिखिए।
4. एक अंक के प्रश्नों का उत्तर लगभग 15-20 शब्दों में लिखिए।
5. दो अंकों के प्रश्नों का उत्तर लगभग 30-40 शब्दों में लिखिए।
6. तीन अंकों के प्रश्नों का उत्तर लगभग 60-70 शब्दों में लिखिए।

### Section A

1. **निम्नलिखित गद्यांशों को पढ़कर पूछे गए प्रश्नों के उत्तर लिखिए-** **[10]**

चंपारण सत्याग्रह के बीच जो लोग गांधीजी के सम्पर्क में आए वे आगे चलकर देश के निर्माताओं में गिने गए। चंपारण में गांधीजी न सिर्फ सत्य और अंहिसा का सार्वजनिक हितों में प्रयोग कर रहे थे बल्कि हलुवा बनाने से लेकर सिल पर मसाला पीसने और चक्की चलाकर गेहूँ का आटा बनाने की कला भी उन बड़े वकीलों को सिखा रहे थे, जिन्हें गरीबों की अगुवाई की जिम्मेदारी सौंपी जानी थी। अपने इन आध्यात्मिक प्रयोगों के माध्यम से वे देश की गरीब जनता की सेवा करने और उनकी तकदीर बदलने के साथ देश को आजाद कराने के लिए समर्पित व्यक्तियों की एक ऐसी जमात तैयार करना चाह रहे थे जो सत्याग्रह की भट्टी में उसी तरह तपकर निखरे, जिस तरह भट्टी में सोना तपकर निखरता और कीमती बनता है।
गांधीजी की मान्यता थी कि एक प्रतिष्ठित वकील और हजामत बनाने वाले हज्जाम में पेशे के लिहाज से कोई फर्क नहीं, दोनों की हैसियत एक ही है। उन्होंने पसीने की कमाई को सबसे अच्छी कमाई माना और शारीरिक श्रम को अहमियत देते हुए उसे उचित प्रतिष्ठा व सम्मान दिया था। कोई काम बड़ा नहीं, कोई काम छोटा नहीं, इस मान्यता को उन्होंने स्थापित करना चाहा। मर्यादाओं और मानव-मूल्यों को उन्होंने प्राथमिकता दी ताकि साधन शुद्धता की बुनियाद पर एक ठीक समाज खड़ा हो सके। आजाद हिन्दुस्तान आत्मनिर्भर, स्वावलंबी और आत्म-सम्मानित देश के रूप में विश्व-बिरादरी के बीच अपनी एक खास पहचान बनाए फिर उसे बरकरार भी रखे।

i. गांधी जी ने अच्छे समाज के निर्माण के लिए किसे महत्व दिया?
ii. एक प्रतिष्ठित वकील और हज्जाम के बारे में गाँधी जी की क्या मान्यता थी?
iii. गाँधीजी बड़े वकीलों को क्या सिखाना चाहते थे और क्यों?
iv. गाँधी आध्यात्मिक प्रयोग क्यों कर रहे थे।
v. व्यवसाय के लेकर गाँधीजी के क्या विचार थे?
vi. उपरोक्त गद्यांश के लिए उचित शीर्षक लिखिए।

### Section B

2. **निर्देशानुसार उत्तर दीजिए-** **[4]**

i. हुड़दंग तो इतना मचाया कि कॉलेज वालों को थर्ड इयर भी खोलना पड़ा। (वाक्य-भेद/आश्रित उपवाक्य का नाम लिखिए।)
ii. मैं जल्दी से बाहर जाकर ओले देखने लगा। (मिश्र वाक्य में बदलिए।)
iii. नवाब साहब कुछ देर गाड़ी की खिड़की के बाहर देखकर स्थिति पर गौर करते रहे। (संयुक्त वाक्य में बदलिए।)

iv. जिस समय आचार्यों ने नाट्यशास्त्र-संबंधी नियम बनाए थे उस समय सर्वधारण की भाषा संस्कृत न थी। (वाक्य-भेद लिखिए।)

3. **निर्देशानुसार उत्तर दीजिए-** **[4]**

i. नवाब साहब ने जेब से चाकू निकाला और खीरे छीलने शुरू कर दिए। (कर्मवाच्य में बदलिए।)

ii. आओ ! वहाँ बैठें। (भाववाच्य में बदलिए।)

iii. उन्हें आराम करने के लिए कहा गया। (कर्तृवाच्य में बदलिए।)

iv. वह गिने-चुने फ्रेमों को नेताजी की मूर्ति पर फिट कर देता है। (कर्मवाच्य में परिवर्तित कीजिए।)

4. **रेखांकित पदों का पद-परिचय दीजिए-** **[4]**

i. असली परीक्षा <u>अब</u> थी।

ii. जो <u>दायित्व</u> मुझे सौंपा गया था।

iii. उसके लिए <u>मैं</u> सक्षम हूँ।

iv. उसको लेकर <u>गहरा</u> संदेह मेरे भीतर था।

5. श्रीकृष्ण के सुन वचन अर्जुन क्रोध से जलने लगे। **[4]**
सब शोक अपना भूलकर करतल युगल मलने लगे।

i. काव्यांश पढ़कर उसमें निहित रस पहचानकर लिखिए|

ii. हास्य रस का एक उदाहरण लिखिए।

iii. 'श्रृंगार रस' के स्थायीभाव का नाम लिखिए।

iv. उत्साह किस रस का स्थायीभाव है?

## Section C

6. **निम्नलिखित गद्यांशों को पढ़िए और नीचे दिये गए प्रश्नों के उत्तर लिखिए-** **[6]**

बार-बार सोचते, क्या होगा उस कौम का जो अपने देश की खातिर घर-गृहस्थी, जवानी-जिन्दगी सब कुछ होम कर देने वालों पर भी हँसती है और अपने लिए बिकने के मौके ढूँढती है। दुःखी हो गए। पन्द्रह दिन बाद फिर उसी कस्बे से गुजरे। कस्बे में घुसने से पहले ही ख्याल आया कि कस्बे की हृदयस्थली में सुभाष की प्रतिमा अवश्य ही प्रतिष्ठापित होगी, लेकिन सुभाष की आँखों पर चश्मा नहीं होगा।..... क्योंकि मास्टर बनाना भूल गया।..... और कैप्टन मर गया। सोचा, आज वहाँ रुकेंगे नहीं पान भी नहीं खाएँगे, मूर्ति की तरफ देखेंगे भी नहीं, सीधे निकल जाएँगे। ड्राइवर से कह दिया, चौराहे पर रुकना नहीं, आज बहुत काम है, पान आगे कहीं खा लेंगे।

लेकिन आदत से मजबूर आँखें चौराहा आते ही मूर्ति की तरफ उठ गईं। कुछ ऐसा देखा कि चीखे, रोको ! जीप स्पीड में थी, ड्राइवर ने जोर से ब्रेक मारे। रास्ता चलते लोग देखने लगे। जीप रुकते-न-रुकते हालदार साहब जीप से कूदकर तेज़-तेज़ कदमों से मूर्ति की तरफ लपके और उसके सामने जाकर अटेंशन में खड़े हो गए।

मूर्ति की आँखों पर सरकंडे से बना छोटा-सा चश्मा रखा हुआ था, जैसा बच्चे बना लेते हैं। हालदार साहब भावुक हैं। इतनी-सी बात पर उनकी आँखें भर आईं।

i. मूर्ति के सामने जाकर अटेंशन में कौन खड़े हो गए?

ii. हालदार साहब शहर से गुजरते हुए क्या सोच रहे थे और क्यों?

iii. हालदार साहब किसके बारे में सोच रहे थे और क्यों?

7. निम्नलिखित प्रश्नों में से किन्ही चार के उत्तर दीजिये: **[8]**

a) आपकी दृष्टि से भगत की कबीर पर अगाध श्रद्धा के क्या कारण रहे होंगे?

b) बिना कथ्य के कहानी लिखना संभव नहीं है लखनवी अंदाज़ पाठ के आधार पर व्यंग्य स्पष्ट कीजिए।

c) लेखक के स्मृति-पटल पर उस संन्यासी के कौन-कौन से चित्र बार-बार उभरते हैं? मानवीय करुणा की दिव्य चमक पाठ के आधार पर लिखिए।

d) 'एक कानी यह भी की लेखिका मन्नू भंडारी के पिता ने रसोई को 'भटियार खाना' कहकर क्यों संबोधित किया है? यह उनकी किस सोच का परिचायक है?

e) 'बिस्मिल्ला खाँ कला के अनन्य उपासक थे।''नौबतखाने में इबादत' पाठ के आलोक में उत्तर दीजिए।

8. **निम्नलिखित काव्यांशों को ध्यानपूर्वक पढ़कर आधारित प्रश्नों के उत्तर दीजिए-** **[6]**

बिहँसि लखनु बोले मृदु बानी । अहो मुनीसु महाभट मानी ।।
पुनि-पुनि मोहि देखाव कुठारु। चहत उड़ावन फैंक पहारू॥
इहाँ कुम्हड़बतियाँ कोउ नाहीं । जे तरजनी देखि मरि जाहीं ।।
देखि कुठारु सरासन बाना। मैं कछु कहा सहित अभिमाना॥
भृगुसुत समुझि जनेउ बिलोकी। जो कुछ कहहु सह रिस रोकी ।।
सुर महिसुर हरिजन अरु गाई। हमरे कुल इन्ह पर न सुराई ।।
बधे पापु अपकीरति हारे । मारतहू पा परिअ तुम्हारे ।।
कोटि कुलिस सम बचनु तुम्हारा। व्यर्थ धरहु धनु बान कुठारा ।।

i. 'कुम्हड़बतिया' का उदाहरण क्यों दिया गया है ?
ii. लक्ष्मण के हँसने का क्या कारण है?
iii. 'मुनीसु' कौन हैं ? लक्ष्मण उनसे बहस क्यों कर रहे हैं?

9. निम्नलिखित प्रश्नों में से किन्ही चार के उत्तर दीजिये: **[8]**

a) “आए अज्ञात दिशा से अनंत के घन!” पंक्ति का भाव उत्साह' कविता के आधार पर समझाकर लिखिए।
b) कवि के अनुसार फसल क्या है?
c) छाया मत छूना कविता का प्रतिपाद्य संक्षेप में लिखिए।
d) 'कन्यादान' कविता नारी को कैसे सचेत करती है?
e) उद्धव द्वारा दिए गए योग के संदेश ने गोपियों की विरहाग्नि में घी का काम कैसे किया ?

10. निम्नलिखित प्रश्नों में से किन्ही दो के उत्तर दीजिये: **[6]**

a) "जब ख़ाएगा बड़े-बड़े कौर तब पाएगा दुनिया में ठौर" पंक्ति के कथन का संदर्भ लिखकर बताइए कि “माता का आँचल पाठ में वर्णित माता अपने पुत्र को किस भाव से खिलाती थीं और इससे क्या शिक्षा ग्रहण करते हैं?
b) 'जॉर्ज पंचम की नाक' को पुनः लगाने के लिए क्या - क्या किए गए |
c) जितेन नोर्गे ने लेखिका को सिक्किम की प्रकृति तथा वहाँ की भौगोलिक स्थिति और जन जीवन के बारे में जो-जो महत्वपूर्ण जानकारियाँ दीं? उन्हें अपने शब्दों में स्पष्ट कीजिए।

## Section D

11. **मेक इन इण्डिया** विषय पर दिए गये संकेत बिन्दुओं के आधार पर लगभग 200 से 250 शब्दों में निबंध लिखिए। **[10]**

- प्रस्तावना,
- उक्ति का अर्थ,
- सोने की चिड़िया भारत की पृष्ठभूमि,
- ऊद्यमी देश पराधीनता काल में बदला परिदृश्य,
- विकास में अग्रसर होने का संकल्प,
- उपसंहार।

OR

**मेरे जीवन का आदर्श** विषय पर दिए गए संकेत बिंदुओं के आधार पर लगभग 200 से 250 शब्दो में निबंध लिखिए।

- नाम व परिचय
- उनका व्यक्तित्व
- छात्रों को सहयोग
- उपसंहार।

OR

**खेल और स्वास्थ्य** विषय पर दिए गये संकेत बिन्दुओं के आधार पर लगभग 200 से 250 शब्दों में निबंध लिखिए।

- खेलों की उपयोगिता,

- खेल और स्वास्थ्य का संबंध,
- हमारा कर्तव्य।

12. अपने विदेशी मित्र को अपने जीवन का लक्ष्य बताते हुए पत्र लिखिए। **[5]**

OR

सभी औपचारिकताएँ पूर्ण करने के उपरान्त भी 'आधार पहचान पत्र' न मिलने की शिकायत करते हुए अपने क्षेत्र से संबद्ध अधिकारी को पत्र लिखिए।

13. आपको दुकान पर काम करने वाले लड़कों की आवश्यकता है। इस हेतु विज्ञापन का प्रारूप तैयार कीजिए। **[5]**

OR

किसी राज्य के पर्यटन विभाग की ओर से राज्य में पर्यटन को बढ़ावा देने के लिए 25-50 शब्दों का एक विज्ञापन तैयार कीजिए।

**Solution**

**Class 10 - English Language and Literature**

**CONFIDENCE EXAMINATION-I 2019-2020**

**Section A**

1. a. The coalition government
   b. All of these
   c. True
   d. severe headache
   e. Regional parties
   f. The political ideology was meant to unite different sects of people.
   g. Congress was a union of people from different points of view.
   h. all of these
2. To fulfil her dream of being a great musician, she stopped being angry and instead found ways of adapting her playing to suit her deafness.
   Glennie is now famous for being the world's only full-time solo percussionist.
   a. Glennie's ambition was to become a solo percussionist.
   b. Evelyn Glennie was born in 1965 and grew up on a farm near Aberdeen in Scotland.
   c. Glennie became angry because she thought she would never be able to fulfil her dream of becoming a great musician.
   d. Evelyn Glennie does not wear shoes or socks when she performs to enable her to feel the music through the floor and her body.

   Part-II
   a. goal in life
   b. angry
   c. uncommon
   d. enable

**Section B**

3. 112, Laxmi Nagar
   New Delhi
   March 5, 2018
   The Editor
   The Times of India
   New Delhi
   Sir,
   **Subject: Littered Roads: A Health Hazard**
   I regret to inform you that the unhealthy conditions prevailing in our locality for the past few days are now posing serious health hazards because of the MCD employees' strike. If garbage heaps around in a residential area, they not only present an unpleasant sight but also pose a great health hazard.
   Since Rajendra Nagar is a relatively new locality, there are numerous vacant plots, that are being invariably and insensitively used by the public to dump their garbage. The stench in the air is unbearable, not to mention the peril of an outbreak of infectious diseases.
   People attempts to counsel on the importance of community hygiene are being counter-argued, i.e. that in the absence of proper dumping sites or dustbins, vacant spots are their only option. It is important that both the public as well as the authorities should take up a collective responsibility to maintain a clean environment and contribute towards the common good.
   I hope this letter of mine will awake the concerned authorities, will take prompt action and help in making the surroundings healthy.
   Thanking you,
   Yours faithfully,
   Miki.

OR

**Telephone: A Nuisance**

**(By XYZ)**

A telephone is an important instrument that helps us to connect to our relatives and friends living far from us. But it has many disadvantages too. The telephone bell rings and a person rushes to hear it from the dining table. Sometimes it happens that the phone is required to convey an important message but one finds that the phone is dead. He starts cursing the telephone operator and the exchange. Telephone plays hide-and-seek with the owner when he needs its services most urgently. It also disturbs the peace of mind. The telephone department is prompt in sending the bill but is slack in attending to the complaints. The untimely ring of a telephone disturbs the sensitive people. The telephone is a nuisance. Moreover, its use should be limited and if possible it must be discarded as it is dangerous for our ears and health.

4. **Little Helping Hands**

On my way to school, I usually see a beggar on the roadside. Yesterday on my way back, I did not see him there. Walking further I saw him limping slowly. Out of idle curiosity, I followed him. Soon I found him sitting near a child and that child was about six years old. Then, he sat beside that child and opened a little bag, hanging on his shoulder. He took out a packet of biscuit and gave it to him. Standing far away, I witnessed all that. Though the beggar was also looking very hungry yet he didn't even take a bite of the biscuit. Rather he preferred to satisfy the child's hunger. At that time I was feeling out of sorts. Now it was very difficult for me to hide my curiosity. I crossed the road and reached the spot where the beggar and the child were sitting. When I stood near them, the beggar stared at me questionably. I addressed the beggar, "Baba". As soon as I uttered that word, the beggar, for a minute, looked at my face and then started crying. I tried to soothe him and asked him some questions- "Who is this boy?" "Why are you limping?" "Why are you crying ?" After a few moments, he controlled himself and then told me the whole story. The previous day, he found two policemen dragging a woman, accusing her of a pickpocketer. They didn't give her the time to take her son along with her. The child was left behind crying on the road. Then he went near to that child and assured him that he would take care of him. He told me that he had gone to the police station to inform and console the lady about the well being of her son. But the constable thought that he was her counterpart and he hit him badly on his legs. listening to all this, tears ran down my eyes and I felt miserable for that old man. After that, I ran to my place and told the whole story to my parents. My parents gave me some food items and some money too so that the old man would get treatment for his leg. I gave those to the old man and I took my ease.

OR

**A Wonderful Surprise**

Mansi was very happy. It was her friend's birthday. She was going to attend such a party for the first time in her life. But she was facing difficulty in going to her friend's party. The problem was that she didn't have the money to buy a present for her friend. So she decided to share this problem with her mother. She mentioned her problem to her mother. Her mother came out with a wonderful solution to her problem. Actually, her father was a baker. His job was to prepare and supply cakes for one of the famous shops of the city. As soon as Mansi's mother handed her the cake, she became overwhelmed with joy. Then she reached the party venue with other friends. On reaching there, she was surprised to see the beautiful decoration. She saw the stalls laid out with mouth-watering dishes. All the children were waiting and wondering as to when they were going to eat them. But to her surprise, she saw the confusion on her friend's face. When she asked her the reason, she told that the birthday cake was spoiled by her two-year-old brother and without cake cutting, the celebration couldn't move ahead. At that moment Mansi presented her gift to her friend. It was a beautiful and delicious chocolate cake. So Mansi's gift became hit. Her friend became mad with joy and started dancing.

Without wasting even a minute, the candles were blown out and the cake was cut. All the children sang a birthday song for her. The cake was cut into slices. After enjoying the cake, all of them enjoyed snacks and food, They, all, sang, danced on a DJ and played different games. Then her friend opened her birthday presents. Many of them were grand and expensive. But to her, Mansi's gift was the previous one. It was an unforgettable moment for Mansi.

5. a. where
   b. desires
   c. on
   d. who

6.

| | Error | Correction |
|---|---|---|
| (a) | children | child |
| (b) | but | and |
| (c) | than | to |
| (d) | being | be |

7. a. Snakes are beautiful reptiles.
   b. Their movements are graceful and beyond compare.
   c. Snakes have several advantages as pets.
   d. Some snakes are not poisonous.

**Section C**

8. a. The two qualities of the animal are that he walks with a stride and looks majestic.
   b. He moves only a few steps because he is in a cage.
   c. Vivid.
   d. Leslie Norris has written the above lines.

OR

   a. It was impossible to see anything outside the aeroplane as there were black clouds all around.
   b. The compass was not working. It was turning round and round, inexplicably.
   c. A word similar in meaning to ‘plunged’ is 'jumped'.
   d. The writer was surprised as the compass turned round and round. The other instruments of the aeroplane were also not working. The writer felt helpless in the storm.

9. Answer any five of the following questions in 30-40 words each:
   a) Mandela mentions that every man has twin obligations to fulfil in his life. The first is to his family, parents, wife and children; the second obligation is to his people, his community and his country.
   b) Mr. Petronski wrote a letter to Miss Mason because the students of her class made fun of Wanda’s name and dress. Wanda was a Polish girl and other students were Americans. Wanda's father got to know that. So, Mr. Petronski decided to move towards town for kid's well being.
   c) Gautama Buddha, initially named Siddhartha Gautama by his parents, was a Prince. He was born in 563 B.C. in North India. He had been shielded from the sufferings of the world. He attained enlightenment at the age of 32 under a fig tree and named the tree the Bo Tree (Tree of Wisdom) and began to teach and to share his new understandings.
   d) When Tricki was in the hospital, Mrs. Pumphrey regularly called the doctor and took information about him. She wanted Tricki to be physically strong. So she started to send him eggs, wine and brandy as a gesture of her love and concern.
   e) When Ausable switched on the lights and closed the door after entering the room, he saw Max with a pistol. Max stood halfway across the room and aimed at them. Ausable told him that he had given him quite a start. He thought that he was in Berlin. Ausable sat down on an armchair and fabricated a story about the balcony.
   f) Griffin was a scientist. He had discovered a rare drug which could make the human body invisible. He swallowed the drug and became as transparent as a sheet of glass. But he was a lawless person. He set fire to his landlord's house. So to escape from there he swallowed that drug and became invisible. He had no money, no food and no clothes. Thus he became a homeless wanderer.

10. Anne was a sober, witty and intelligent girl of Otto Frank. She was a Jewish girl born in German. She was very intelligent and perceptive, and she wanted to be a writer. Anne grew from an innocent, tempestuous, precocious, and somewhat petty teenage girl to an empathetic and sensitive thinker at age fifteen. Over the course of the diary, she grew from a spoiled, somewhat naive young girl of thirteen to a self-aware young woman of fifteen. Her book written in Dutch become one of the world's most readable books. Many films, television and opera had been produced based on her diary. She felt lonely at not having a real friend. So, She dedicated her feelings to a diary named Kitty. Her teachers had a good view of her except her talkative nature. She had an intense love for her grandmother and her teacher, Mrs. Kuperus. Only Mr. Keesing, her maths teacher punished her for her talkative nature by assigning essays.

OR

Valli made detailed plans about her bus ride. She gathered information about the distance the bus travelled, the time it took and the fare by listening to the conversations of others and asking discreet questions. She saved money for the trip by not buying peppermints and sweets and also by not going to the fare. She had the ability to plan and the courage to ride the bus alone. This shows that ability and courage to take risk are essential to fulfill one's dream. Thus, these are the traits which need to be consciously developed so that a person can do what he dreams or wishes to do. Courage to take a risk and the ability to plan accordingly can make a person achieve great heights in life.

11. A true scientist works for the good of humanity. He wants to make man's life easier, more comfortable and enjoyable. He doesn't misuse his discoveries for personal gains or selfish ends. But Griffin, though a brilliant scientist, misused his discovery. By his constant experiments, he had developed a rare drug that helped him make his body invisible. He used his discovery to startle people, enter stores and shops unseen; he robbed people of their money or things and escaped from them when they tried to catch him. He set fire to his landlord's house when he wanted him to leave the house. He stole food, meat, sweets, and wine from a shop. It showed that the misuse of scientific discovery could disturb the peace of society. Such a scientist would use his invention for self-interest and for taking revenge on the people around him. Moreover, he would not honour the law and thus would become an unruly person and a troublemaker.

    OR

    Social discrimination against women has been highlighted in the narrative of 'Bholi', where women are considered a liability, a burden to be borne until they are eventually disposed off in marriage. The family in particular and the society at large have no faith in their capabilities and hence do not consider it essential to educate them. But Bholi's incidence proves that daughters are capable and responsible in supporting the family just the same as the menfolk and can be the 'breadwinners' if the family invests in their education. A significant change in social attitudes can be brought about by creating awareness and counselling. Education helps Bholi to boost her confidence and makes her aware of her rights to say ' NO' to a forced marriage.

**Solution**

**Class 10 - Mathematics (Standard)**

**CONFIDENCE EXAMINATION-I 2019-2020**

**Section A**

1. **(b)** a rational number

   **Explanation:** $\left(\sqrt{a}+\sqrt{b}\right)\left(\sqrt{a}-\sqrt{b}\right) = \left\{\left(\sqrt{a}\right)^2-\left(\sqrt{b}\right)^2\right\}$

   $= (a-b)$

   Since $a$ and $b$ both are positive rational numbers,
   therefore difference of two positive rational numbers is also rational.

2. **(b)** 62

   **Explanation:** Since, Mean = $(\overline{x}) = a+\frac{\sum f_i d_i}{\sum f_i}$ = $47.5+\frac{435}{30}$ = 47.5 + 14.5 = 62

3. **(a)** $(2x+6)^2 = x^2+(2x+4)^2$

   **Explanation:** Let the shortest side of a right angled triangle be $x$ meters. Then according to question, its hypotenuse will be $(2x+6)$ meters and the third side will be $(2x+6-2) = (2x+4)$ meters. Now, using Pythagoras theorem, $(\text{Hypotenuse})^2 = (\text{Base})^2+(\text{Perpendicular})^2 \Rightarrow$
   $(2x+6)^2 = x^2+(2x+4)^2$

4. **(a)** 2

   **Explanation:** Given: $\sin A+2\cos A = 1$
   Squaring both sides, we get
   $\Rightarrow \sin^2 A+4\cos^2 A+4\sin A\cos A = 1$
   $\Rightarrow 1-\cos^2 A+4\left(1-\sin^2 A\right)+4\sin A\cos A = 1$
   $\Rightarrow 1-\cos^2 A+4-4\sin^2 A+4\sin A\cos A = 1$
   $\Rightarrow \cos^2 A+4\sin^2 A-4\sin A\cos A = 4$
   $\Rightarrow (2\sin A-\cos A)^2 = 4$
   $\Rightarrow$ taking square root of both sides
   $\Rightarrow 2\sin A-\cos A = 2$

5. **(b)** 1

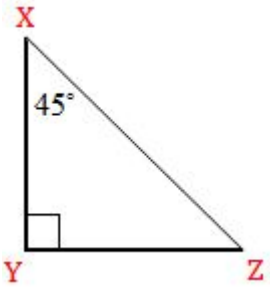
   **Explanation:** Given: $\frac{1+\tan^2\theta}{\sec^2\theta}$

   = $\frac{\sec^2\theta}{\sec^2\theta}$ = 1

   $\left[\because \sec^2\theta = 1+\tan^2\theta\right]$

6. **(d)** $36cm^2$

   **Explanation:** In triangle XYZ,

   $\cos 45^\circ = \frac{XY}{XZ} \Rightarrow \frac{1}{\sqrt{2}} = \frac{XY}{12}$
   $\Rightarrow XY = \frac{12}{\sqrt{2}}$ cm and $\sin 45^\circ = \frac{YZ}{XZ}$
   $\Rightarrow \frac{1}{\sqrt{2}} = \frac{YZ}{12}$
   $\Rightarrow YZ = \frac{12}{\sqrt{2}}$ cm
   $\therefore \text{ar}(\Delta XYZ)$

= $\frac{1}{2} \times \frac{12}{\sqrt{2}} \times \frac{12}{\sqrt{2}}$

= $36cm^2$

7. **(b)** 4

   **Explanation:** Let the coordinates of midpoint O$(5, p)$ is equidistance from the points A$(3p, 4)$ and B $(-2, 4)$.( because O is the mid-point of AB)

   $\therefore 5 = \frac{3p-2}{2} \Rightarrow 3p - 2 = 10$

   $\Rightarrow 3p = 12 \Rightarrow p = 4$

   Also $p = \frac{4+4}{2} \Rightarrow p = 4$

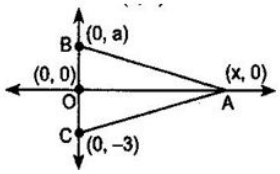
8. **(d)** (0, 3)

   **Explanation:** Let the coordinate of B be $(0, a)$.(0, a).

   It is given that (0, 0) is the mid-point of BC.

   Therefore 0 = (0 + 0) /2 , 0 =(a - 3) /2  a - 3 = 0 ,  a = 3 0 = $\frac{0+0}{2}$, 0 = $\frac{a-3}{2}$, a - 3 = 0, a = 3

   Therefore, the coordinates of B are (0, 3).




9. **(c)** 0.95

   **Explanation:** We know that

   P(E) + P(not E) = 1

   $\therefore$ P(not E) = 1 - P(E)

   = 1 - 0.05

   = 0.95

10. **(a)** $\frac{5}{11}$

    **Explanation:** Total number of fish = 15 + 18 = 33

    Male fish = 15

    Number of possible outcomes = 15

    Number of total outcomes = 15 + 18 = 33

    Required Probability = $\frac{15}{33} = \frac{5}{11}$

11. $5\sqrt{2}$ cm
12. 2

    OR

    3
13. 1:9
14. -73
15. (0, -5)
16. Least prime factor of " $a$ " is 3 and least prime factor of " $b$ " is 7

    Therefore, sum of least prime factors of $a \; and \; b = 3 + 7 = 10$

    and least factor of $10 \; is \; 2$

    Therefore, least factor of $a + b$ is also 2
17. $\triangle ABC$ and $\Delta DEF$ are similar

    $\frac{ar(\Delta ABC)}{ar(\Delta DEF)} = (\frac{AB}{DE})^2$

    $\Rightarrow \frac{ar(\Delta ABC)}{ar(\Delta DEF)} = (\frac{1}{3})^2$

    $\Rightarrow \frac{ar(\Delta ABC)}{ar(\Delta DEF)} = \frac{1}{9}$

    $ar(\Delta ABC) : ar(\Delta DEF) = 1 : 9$
18. $T_n = 2n + 3$

    $T_1 = 2 \times 1 + 3 = 5,$

    $T_2 = 2 \times 2 + 3 = 7,$

$T_3 = 2 \times 3 + 3 = 9$,

$T_4 = 2 \times 4 + 3 = 11$

$\therefore$ 1st four terms are 5, 7, 9 and 11.

OR

The three-digit numbers divisible by 9 start from 108,117,126,135,...,999

Here,

$a = 108$

$d = 9$

$a_n = a + (n-1)d$

$\Rightarrow 999 = 108 + (n-1)(9)$

$\Rightarrow 999 = 108 + 9n - 9$

$\Rightarrow 900 = 9n$

$\Rightarrow$ n=100

Thus, 100 three-digit numbers are divisible by 9.

19. $AF = AE = 7cm$ (tangents from same external point are equal)

$\therefore BF = AB - AF = 13 - 7 = 6cm$

$BD = BF = 6cm$ (tangents from same external point)

$\therefore CD = BC - BD = 14 - 6 = 8cm$

$CE = CD = 8cm$

$\therefore AC = AE + EC$

$= 7 + 8 = 15cm.$

20. We have, $px^2 - 2\sqrt{5}px + 15 = 0$

Since the roots of equation are equal. Then,

Discriminant, D = 0

$\Rightarrow (2\sqrt{5}p)^2 - 4(p)(15) = 0$

$\Rightarrow 20p^2 - 60p = 0$

$\Rightarrow 20p(p - 3) = 0$

$\Rightarrow 20p = 0$ or $p - 3 = 0$

$\Rightarrow p = 3$ [since $p \neq 0$]

**Section B**

21. Total number of possible outcomes when a coin is tossed 3 times=

$(HHH), (HHT), (HTH), (THH)(TTT)(TTH)(THT)(HTT)$

$\Rightarrow T(E) = 8$

Total probability= 1

i. All head i.e., Favourable outcomes = 1

ii. We know that ,$P(E) = \frac{F(E)}{T(E)} = \frac{1}{8}$

iii. Also Number of favourable outcomes of getting at least 2 heads i.e Favourable outcomes = 4 therefore,

$P(E) = \frac{F(E)}{T(E)} = \frac{4}{8} = \frac{1}{2}$

22. $2x^2 + x - 6 = 0$

$\Rightarrow 2x^2 + 4x - 3x - 6 = 0 \Rightarrow 2x(x + 2) - 3(x + 2) = 0$

$\Rightarrow (2x-3)(x+2) = 0 \Rightarrow x = \frac{3}{2}, -2$

23. In $\triangle BED$ and $\triangle ACB$, we have

$\angle BED = \angle ACB = 90^\circ$

$\because \angle B + \angle C = 180^0$

$\therefore BD \| AC$

$\angle EBD = \angle CAB$ (Alternate angles)

Therefore, by AA similarity theorem, we get

$\triangle \text{BED} \sim \triangle \text{ACB}$

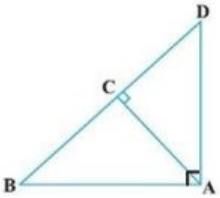
$\Longrightarrow \frac{BE}{AC} = \frac{DE}{BC}$

$\Longrightarrow \frac{BE}{DE} = \frac{AC}{BC}$

OR

Given: △ABD is a right triangle right angled at A and AC⊥ BD.

To Prove: $\frac{AB^2}{AC^2} = \frac{BD}{DC}$




Proof: We know that if a perpendicular is drawn from the vertex of the right angle to the hypotenuse then the triangles on both sides of the perpendicular are similar to the whole triangle and to each other.

So, $\triangle BAD \sim \triangle BCA$ .....(i)

and $\triangle ACB \sim \triangle DCA$ .....(ii)

If two triangles are similar, then the ratio of their corresponding sides are equal.

$\frac{BA}{BC} = \frac{BD}{BA}$ [from (i)]

$BA^2 = BC \times BD$ .....(iii)

Also, $\frac{AC}{DC} = \frac{BC}{AC}$ [from(ii)]

$AC^2 = DC \times BC$ .....(iv)

Hence $\frac{AB^2}{AC^2} = \frac{CB \times BD}{DC \times BC}$

$\frac{AB^2}{AC^2} = \frac{BD}{DC}$

Hence proved.

24. i. According to the figure,

$\sin 42^o = \frac{x}{8}$

$0.669 = \frac{x}{8}$

x = 5.4'

So, height of the tree is 5.4 foot.

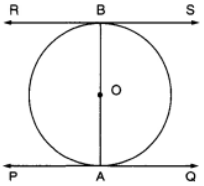
ii. Given: x = 5.4' and $\theta = 30^o$

Let length of the wire be y foot.

Now, $\sin 30^o = \frac{5.4}{y}$

$y = \frac{5.4}{0.5} = 10.8$

So, length of the wire is 10.8 foot.

25. 


Let AB be a diameter of a given circle, and let PQ and RS be the tangent lines drawn to the circle at points A and B respectively. Since tangent at a point to a circle is perpendicular to the radius through the point.

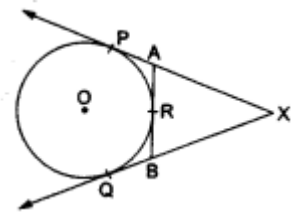
$\therefore \quad AB \perp PQ$ and $AB \perp RS$

$\Rightarrow \quad \angle PAB = 90^\circ$ and $\angle ABS = 90^\circ$

$\Rightarrow \quad \angle PAB = \angle ABS$

$\Rightarrow \quad \text{PQ} || \text{RS}$ [$\because \angle PAB$ and $\angle ABS$ are alternate angles]

OR



We know that the lengths of tangents drawn from an exterior point to a circle are equal.
XP = XQ, ...(i) [tangents from X]
AP = AR, ... (ii) [tangents from A]
BR = BQ. ... (in) [tangents from B]
Now, XP = XQ $\Rightarrow$ XA + AP = XB + BQ
XA + AR = XB + BR [using (ii) and (iii)]

26. i. Volume of the cuboid
$= 15 \times 10 \times 3.5 = 525\text{cm}^3$
ii. Volume of a conical depression
$= \frac{1}{3}\pi(0.5)^2(1.4)$
$= \frac{1}{3} \times \frac{22}{7} \times 0.25 \times \frac{14}{10} = \frac{11}{30}\text{cm}^3$
$\therefore$ Volume of four conical depressions
$= 4 \times \frac{11}{30}\text{cm}^3 = \frac{22}{15}\text{cm}^3 = 1.47\text{cm}^3$
$\therefore$ Volume of the wood in the entire stand
$= 525 - 1.47 = 523.53\text{cm}^3$

**Section C**

27. **HCF (highest common factor) :** The largest positive integer that divides given two positive integers is called the Highest Common Factor of these positive integers.
We need to find H.C.F. of 56 and 88.
By applying Euclid's Division lemma
88 = 56 $\times$ 1 + 32.
Since remainder $\neq$ 0, apply division lemma on 56 and remainder 32
56 = 32 $\times$ 1 + 24.
Since remainder $\neq$ 0, apply division lemma on 32 and remainder 24
32 = 24 $\times$ 1+ 8.
Since remainder $\neq$ 0, apply division lemma on 24 and remainder 8
24 = 8 $\times$ 3 + 0. Therefore, H.C.F. of 56 and 88 = 8

OR

Prime factorisation of 404 and 96 is:
404 = 2 $\times$ 2 $\times$ 101
404 = $2^2 \times 101$
96 = 2 $\times$ 2 $\times$ 2 $\times$ 2 $\times$ 2 $\times$ 3
96 = $2^5 \times 3$
$\therefore$ HCF(404,96 )= $2^2$ = 4
LCM(404, 96 ) = 101 $\times$ $2^5 \times 3$
LCM( 404, 96) = 9696
now we have to verify that,
HCF(404, 96) $\times$LCM(404, 96) = 404$\times$96
Hence,
LHS = HCF $\times$ LCM
= 4 $\times$ 9696
= 38784
RHS= Product of numbers
=404 $\times$ 96 = 38784
Since, LHS=RHS
i.e. HCF $\times$ LCM = Product of 404 and 96.
hence verified

28. Let a be the first term and d be the common difference of the given A.P.
Let the A.P. be $a_1$,$a_2$, $a_3$,..., $a_n$,...
$a_n$ = a + (n - 1)d
It is given that

$a_7$ = -1

⇒ a + (7 - 1) d = -1

⇒ a + 6d = - 1 ..... (i)

and $a_{16}$ = 17

⇒ a + (16 - 1)d = 17

⇒ a + 15d = 17 ..... (ii)

Subtracting equation (i) from equation (ii), we get

15d - 6d = 17 - (-1)

9d = 18

⇒ d = 2

Putting d = 2 in equation (i), we get

a + 6(2) = -1

a + 12 = -1

⇒ a = - 13

Hence, General term = $a_n$ = a + (n - 1) d

= - 13 + (n - 1) 2

= -13 + 2n - 2

= 2n - 15

29. Let the fare from station A to B be Rs. x and that from station A to C be Rs. y.

Then, according to the question,

2x + 3y = 795.....(1)

3x + 5y = 1300.....(2)

From equation(1), 3y = 795 - 2x

$\Rightarrow \quad y = \frac{795-2x}{3}$.....(3)

Substitute this value of y in equation(2), we get

$3x + 5\left(\frac{795-2x}{3}\right) = 1300$

⇒ 9x + 3975 - 10x = 3900

⇒ - x + 3975 = 3900

⇒ - x = 3900 - 3975

⇒ -x = -75

⇒ x = 75

Substituting the value of x in equation (3), we get

$y = \frac{795-2(75)}{3} = \frac{795-150}{3} = \frac{645}{3} = 215$

Hence, the fare from station A to B is Rs. 75 and that from station A to C is Rs. 215.

Verification: Substituting x = 75, y = 215, we find that both the equations (1) and (2) arfe satisfied as shown below:

2x + 3y = 2(75) + 3(215) = 150 + 645 = 795

3x + 5y = 3(75) + 5(215) = 225 + 1075 = 1300

This verifies the solution.

OR

Given pair of linear equation is $ax + by - a + b = 0$ .....(i)

and $bx - ay - a - b = 0$ ..... (ii)

Multiplying $ax + by - a + b = 0$ by a and $bx - ay - a - b = 0$ by b, and adding them, we get

$a^2x$ + aby - $a^2$ + ab = 0 and $b^2x$ - aby - ab - $b^2$ = 0

($a^2x$ + aby - $a^2$ + ab ) + ($b^2x$ - aby - ab - $b^2$ ) = 0

$a^2x$ + aby - $a^2$ + ab + $b^2x$ - aby - ab - $b^2$ = 0

$a^2x$ + $b^2x$ - $a^2$- $b^2$ = 0

$\Rightarrow (a^2 + b^2)x = (a^2 + b^2)$

$\Rightarrow x = \frac{(a^2+b^2)}{(a^2+b^2)} = 1$

On putting x =1 in first equation, we get

$ax + by - a + b = 0$

$a + by = a - b$

$\Rightarrow y = -\frac{b}{b} = -1$

Hence, x=1 and y=-1, which is the required unique solution.

30. f(x) = $x^3 - 3x^2 + x + 1$

It is given that a - b, a and a + b are the zeroes of f(x).

Now, Sum of the zeroes $= -\frac{\text{Coeff. of } x^2}{\text{Coeff. of } x^3}$

$\Rightarrow$ a - b + a + a +b = $-\frac{-3}{1}$

$\Rightarrow$ 3a = 3

$\Rightarrow$ a = 1

and, Product of zeros $= -\frac{\text{Constant term}}{\text{Coeff. of } x^3}$

$\Rightarrow$ (a -b )(a) (a + b) $= -\frac{1}{1}$

$\Rightarrow$ $a(a^2 - b^2) = -1$

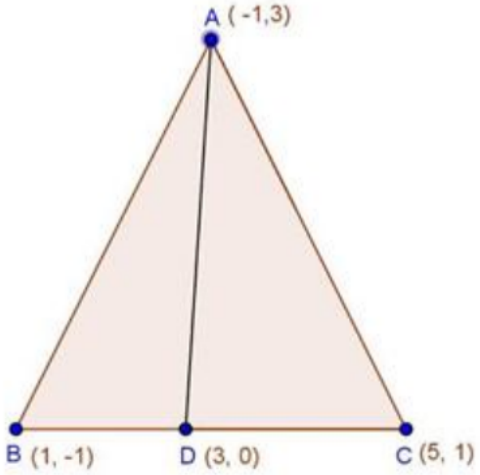
$\Rightarrow$ $1 - b^2 = -1$ ($\because$ a = 1)

$\Rightarrow b^2 = 2$

$\Rightarrow b = \pm\sqrt{2}$

Hence the value of a = 1 and b = $\pm\sqrt{2}$

31.




Let A(-1, 3), B(1, -1) and C(5, 1) be the vertices of triangle ABC and let AD be the median through A.

Since, AD is the median, D is the mid-point of BC

Coordinates of mid point are $(\frac{x_1+x_2}{2}, \frac{y_1+y_2}{2})$

$\therefore$ Coordinates of D are $\left(\frac{1+5}{2}, \frac{-1+1}{2}\right) = (3,0)$

So, Length of median $AD = \sqrt{(3+1)^2 + (0-3)^2}$

$= \sqrt{(4)^2 + (-3)^2}$

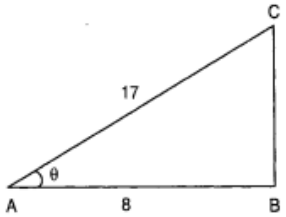
$= \sqrt{16+9}$

$= \sqrt{25}$

=5 units

Hence, median AD is 5

32.




We have,

$\cos\theta = \frac{\text{Base}}{\text{Hypotenuse}} = \frac{8}{17}$

So, Let ABC is a right angle triangle in which $\angle B = 90^\circ$

Base = AB = 8 units, Hypotenuse = AC = 17 units and, $\angle BAC = \theta$

By Pythagoras theorem, we have

$AC^2 = AB^2 + BC^2$

$\Rightarrow 17^2 = 8^2 + BC^2$

$\Rightarrow BC^2 = 17^2 - 8^2$

$\Rightarrow BC^2 = 289 - 64 = 225$

$\Rightarrow BC = \sqrt{225} = 15$

When we consider the trigonometric-ratios of $\angle BAC = \theta$ we have

Base = AB = 8 units, perpendicular = BC = 15 units, and Hypotenuse = AC =17 units

$\therefore \sin\theta = \frac{\text{Perpendicular}}{\text{Hypotenuse}} = \frac{15}{17}$

$\tan\theta = \frac{\text{Perpendicular}}{\text{Base}} = \frac{15}{8}$

$cosec\,\theta = \frac{\text{Hypotenuse}}{\text{Perpendicular}} = \frac{17}{15}$

$\sec\theta = \frac{\text{Hypotenuse}}{\text{Base}} = \frac{17}{8}$

and,$\cot\theta = \frac{\text{Base}}{\text{Perpendicular}} = \frac{8}{15}$

OR

LHS

$= \sin^6\theta + \cos^6\theta$

$= \left(\sin^2\theta\right)^3 + \left(\cos^2\theta\right)^3$

$= \left(\sin^2\theta + \cos^2\theta\right)^3 - 3\sin^2\theta\cos^2\theta\left(\sin^2\theta + \cos^2\theta\right)$

$\left[\because a^3 + b^3 = (a+b)^3 - 3ab(a+b)\right]$

$= (1)^3 - 3\sin^2\theta\cos^2\theta \times 1 \left[\because \sin^2\theta + \cos^2\theta = 1\right]$

$= 1 - 3\sin^2\theta\cos^2\theta$

RHS $= \frac{4-3(x^2-1)^2}{4}$

$= \frac{4-3\left\{(\sin\theta+\cos\theta)^{\,2}-1\right\}^2}{4}\ [given\ x = \sin\theta + \cos\theta]$

$= \frac{4-3\left\{\sin^2\theta+\cos^2\theta+2\sin\theta\cos\theta-1\right\}^{\,2}}{4}$

$= \frac{4-3\{1+2\sin\theta\cos\theta-1\}^{\,2}}{4}\ \left[\because \sin^2\theta + \cos^2\theta = 1\right]$

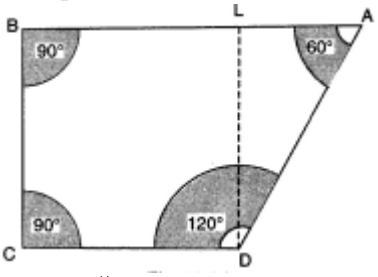
$= \frac{4-3(2\sin\theta\cos\theta)^{\,2}}{4}$

$= \frac{4-3\times 4\sin^2\theta\cos^2\theta}{4}$

$= \frac{4\left(1-3\sin^2\theta\cos^2\theta\right)}{4}$

LHS = RHS

Hence proved.

33. 


Since $AB \| CD$ and ∠ABC = 90°. Therefore ∠BCD = 90°.

Also, ∠BAD = 60°

So, ∠CDA = 180° - 60° = 120° [Co-interior angles]

We know that, $Area\ of\ sector = \frac{\theta}{360} \times \pi r^2$ square units. where $\theta$ is the angle, r is the radius.

Given r = 17.5 and $\theta = 60^\circ$ for sector A, $\theta = 90^\circ$ for sector B, $\theta = 90^\circ$ for sector C, $\theta = 120^\circ$ for sector D

i. Area of Four sectors = Area of sector at A + Area of the sector at B + Area of the sector at C + Area of the sector at D.

$= \frac{60}{360} \times \pi \times (17.5)^2 + \frac{90}{360} \times \pi \times (17.5)^2 + \frac{90}{360} \times \pi \times (17.5)^2 + \frac{120}{360} \times \pi \times (17.5)^2$

$= \left(\frac{60}{360} + \frac{90}{360} + \frac{90}{360} + \frac{120}{360}\right) \times \pi \times (17.5)^2 \text{m}^2$

$= \left(\frac{60+90+90+120}{360}\right) \times \pi \times (17.5)^2 m^2$

$= \left(\frac{360}{360}\right) \times \pi \times 306.25 m^2$

$= \frac{22}{7} \times 306.25 \text{m}^2 = 962.5 \text{m}^2$

ii. Let DL be perpendicular drawn from D on AB. Then,

AL = AB - BL = AB - CD = (75 - 50) m = 25 m

In right $\triangle$ALD, we have

$\tan 60^\circ = \frac{DL}{AL} \Rightarrow \sqrt{3} = \frac{DL}{25} \Rightarrow DL = 25\sqrt{3} \text{m}$

$\therefore$ Area of trapezium ABCD = $\frac{1}{2}$( sum of parallel sides ) $\times$ height

= $\frac{1}{2}$(AB+CD) DL

= $\frac{1}{2}$(75 + 50) $\times$ 25 $\times$1.732 $m^2$ = 2706.25 $m^2$

Area of the remaining portion = Area of trapezium ABCD - Area of 4 sectors = 2706.25 $m^2$ - 962.5 $m^2$ = 1743.75 $m^2$

34. Calculation of mean:

| **Monthly Salary** | $x_i$ | **Number of persons($f_i$)** | $f_i x_i$ |
|---|---|---|---|
| 325.5 - 350.5 | 338 | 20 | 6760 |
| 350.5 - 375.5 | 363 | 10 | 3630 |
| 375.5 - 400.5 | 388 | 10 | 3880 |
| 400.5 - 425.5 | 413 | 5 | 2065 |
| 425.5 - 450.5 | 438 | 1 | 438 |
| 450.5 - 475.5 | 463 | 2 | 926 |
| 475.5 - 500.5 | 488 | 2 | 976 |
| | | $\Sigma f_i$ = 50 | $\Sigma f_i x_i$ =18675 |

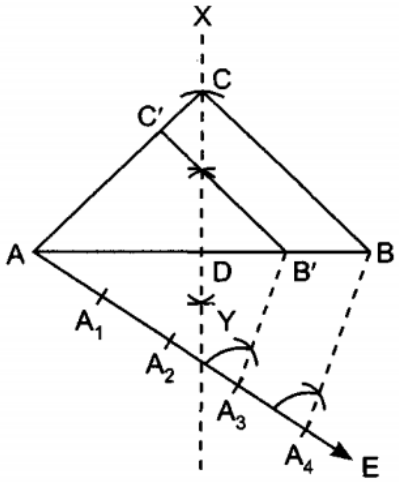
We know that, Mean = $\frac{\Sigma f_i x_i}{\Sigma f_i}$

$= \frac{(18675)}{50}$

$= 373.5$

**Section D**

35.




**Steps of Construction**:

i. A line segment AB = 8 cm is drawn.

ii. Perpendicular bisector XY of AB is drawn intersecting AB at D.

iii. With D as centre an arc of radius 4 cm intersecting DX at C is drawn.

iv. AC and BC are joined to get $\triangle$ABC.

v. Acute angle BAE is drawn below AB.

vi. Points $A_1$, $A_2$, $A_3$, $A_4$ are taken of AE such that $AA_1 = A_1A_2 = A_2A_3 = A_3A_4$.

vii. $A_4$B is joined.

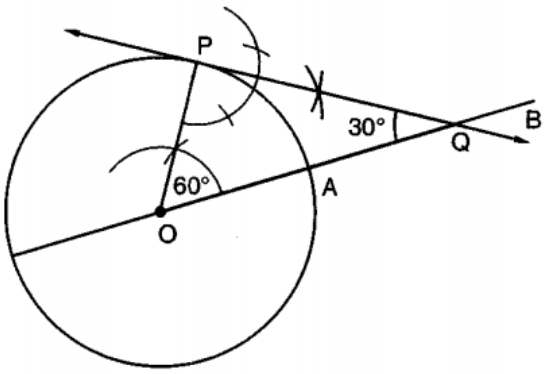
viii. $A_3$B' is drawn parallel to $A_4$B to meet AB at B'.

ix. B'C' is drawn parallel to BC to meet AC at C'. $\triangle$AB'C' is the required triangle.

OR

Steps of construction

**STEP I** Draw a circle with centre O and radius 3 cm.




**STEP II** Draw a radius OA of this circle and produce it to B.

**STEP III** Construct an angle $\angle AOP$ equal to the complement of 30° i.e. equal to 60°.

**STEP IV** Draw perpendicular to OP at P which intersects OA produced at Q

Clearly, PQ is the desired tangent such at $\angle OQP$ = 30°

36. refer ncert

37. Let length of given rectangle be x and breadth be y

∴ area of rectangle = xy

According to the first condition

(x - 5)(y + 3) = x y - 9

or, xy + 3x - 5 y - 15 = xy - 9

or, xy + 3x - 5y - xy = 15 - 9

or, 3x - 5y = 6.....(i)

According to the second condition,

(x +3)(y +2) = xy + 67

or, xy + 2x + 3y + 6 = xy + 67

or, xy + 2x + 3y - xy = 67 - 6

or, 2x + 3y = 61 ...(ii)

Multiplying eqn. (i) by 3 and eqn. (ii) by 5 and then adding,

9x-15y = 18

10x + 15y = 305

or, 19x = 323

$\therefore x = \frac{323}{19} = 17$

Substituting this value of x in eqn. (i),

3(17)-5y = 6

51 - 5y = 6

or, 5y = 51 - 6

∴ y = 9

Hence, perimeter = 2(x + y) = 2(17 + 9) = 52 units.

OR

Suppose, the digit at units and tens place of the given number be x and y respectively.

∴ the number is $10y + x$

After interchanging the digits, the number becomes $10x + y$

Given: The sum of the numbers obtained by interchanging the digits and the original number is 66.

Thus, $(10x + y) + (10y + x) = 66$

$\Rightarrow 10x + y + 10y + x = 66$
$\Rightarrow 11x + 11y = 66$
$\Rightarrow 11(x + y) = 66$
$\Rightarrow x + y = \frac{66}{11}$
$\Rightarrow x + y = 6$ .....(i)
Also given, the two digits of the number are differing by 2.
$\therefore$ we have $x - y = \pm 2$....(ii)
So, we have two systems of simultaneous equations,
$x - y = 2,\ x + y = 6$
$x - y = -2,\ x + y = 6$
Here x and y are unknowns. We have to solve the above systems of equations for x and y.

1. First, we solve the system
   $x - y = 2$
   x + y = 6
   Adding the two equations,
   $\Rightarrow (x - y) + (x + y) = 2 + 6$
   $\Rightarrow x - y + x + y = 8$
   $\Rightarrow 2x = 8$
   $\Rightarrow x = \frac{8}{2}$
   $\Rightarrow x = 4$
   Substituting the value of x in the first equation, we have
   $4 - y = 2$
   $\Rightarrow y = 4 - 2$
   $\Rightarrow y = 2$
   Hence, the number is 10 $\times$ 2 + 4 = 24
2. Now, we solve the system
   $x - y = -2$
   $x + y = 6$
   Adding the two equations, we have
   $(x - y) + (x + y) = -2 + 6$
   $\Rightarrow x - y + x + y = 4$
   $\Rightarrow 2x = 4$
   $\Rightarrow x = \frac{4}{2}$
   $\Rightarrow$ x = 2
   Substituting the value of x in the first equation,
   $\Rightarrow 2 - y = -2$
   $\Rightarrow y = 2 + 2$
   $\Rightarrow$ y = 4
   Hence, the number is 10 $\times$ 4 + 2 = 42

   Thus, the two numbers are 24 and 42.

38. According to question,A farmer connects a pipe of internal diameter 20 cm from a canal into a cylindrical tank in his field, which is 10 m in diameter and 2 m deep.
    Diameter of pipe = 20 cm.
    $\therefore$ Radius of pipe $= \frac{20}{2} = 10\text{cm}$
    $= 0.10m$
    Diameter of tank = 10 m
    $\therefore$ radius of the tank $= \frac{20}{2} = 5\text{m}$
    Depth of tank = 2m
    Volume of tank $= \pi r^2 h$
    $= \pi \times 5 \times 5 \times 2$
    $= 50\pi$

Speed of the water 3 km/ hr.

$= \frac{3000}{60} = 50\text{m/min}$

Volume of water supplied in one minute

$= \pi r^2 h$

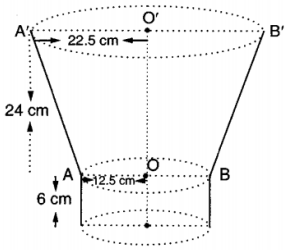
$= \pi \times 0.10 \times 0.10 \times 50$

Let time taken by $t = \frac{50\pi}{\pi \times .10 \times 0.10 \times 50} = 100$

Hence time taken to fill the tank = 100 minutes.

OR

Area of metallic sheet used = curved surface area of frustum + curved surface area of cylinder + area of circular base.




Diameter of bigger circular end = 45 cm

Radius = $r_1$ = 22.5 cm

Diameter of smaller circular end = 25 cm

Radius $r_2$ = 12.5 cm .

Now height of the frustum = Total height of bucket - height of cylinder

= 40 cm - 6 cm = 34 cm

Let l be the slant height of the frustum. Then,

$l = \sqrt{h^2 + (r_1 - r_2)^2} = \sqrt{24^2 + (22.5 - 12.5)^2}$ = $\sqrt{576 + 100} = 26\text{cm}$

Let A be the area of metallic sheet used. Then,

A = Curved surface area of the frustum of cone + Area of circular base + Curved surface area of cylinder.

$A = \pi (r_1 + r_2) l + \pi r_2^2 + 2\pi r_2 h_2$,where $h_2$ = height of the base = 6 cm

$\Rightarrow \quad A = \pi \left[(22.5 + 12.5) \times 26 + 12.5^2 + 2 \times 12.5 \times 6\right] \text{cm}^2$

$\Rightarrow \quad A = \pi \times (1216.25)\text{cm}^2 = \frac{22}{7} \times 1216.25\text{cm}^2 = 3822.5\text{cm}^2$

Let V be the volume of water that the bucket can hold. Then,

$V = \frac{1}{3} \times \pi \times \left(r_1^2 + r_2^2 + r_1 r_2\right) \times h$

$\Rightarrow \quad V = \frac{1}{3} \times \frac{22}{7} \times \left\{22.5^2 + 12.5^2 + 22.5 \times 12.5\right\} \times 24\text{cm}^3$

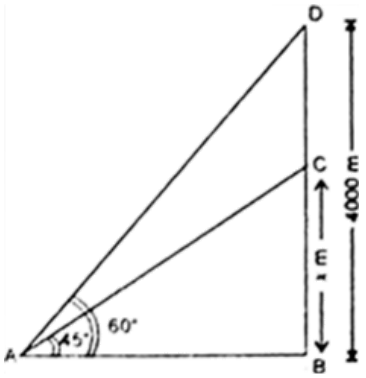
$\Rightarrow \quad V = \frac{1}{3} \times \frac{22}{7} \times \left\{(9 \times 2.5)^2 + (5 \times 2.5)^2 + (9 \times 2.5) \times (5 \times 2.5)\right\} \times 24\text{cm}^3$

$\Rightarrow \quad V = \frac{1}{3} \times \frac{22}{7} \times (2.5)^2 \left(9^2 + 5^2 + 9 \times 5\right) \times 24\text{cm}^3$

$\Rightarrow \quad V = \frac{1}{3} \times \frac{22}{7} \times (2.5)^2 \times (151) \times 24\text{cm}^3 = 23728.57\text{cm}^3$ = 23.728 litres

So, the bucket can hold 23.728 litres of water.

39.




Let C and D is the position of two aeroplanes. The height of the aeroplane which is at point D is 3000 m and it passes another aeroplane vertically which is at point C. Let BC = x m. It is also given that the angles of elevation of two planes from the point A on the ground is 45° and 60° respectively.

In right triangle ABC, we have

$tan45^\circ = \frac{BC}{AB}$

$\Rightarrow 1 = \frac{x}{AB}$

$\Rightarrow x = AB$...(i)

In right triangle ABD, we have

$tan60^\circ = \frac{BD}{AB}$

$\Rightarrow \sqrt{3} = \frac{3000}{AB}$

$\Rightarrow AB = \frac{3000}{\sqrt{3}}$...(ii)

Comparing (i) and (ii), we get

$x = \frac{3000}{\sqrt{3}}$

Hence, vertical distance between the aeroplane = CD = BD - BC

$= 3000 - \frac{3000}{\sqrt{3}}$

$= 3000 - \frac{3000}{1.732}$

$= 3000 - 1732.1$

$= 1267.8$

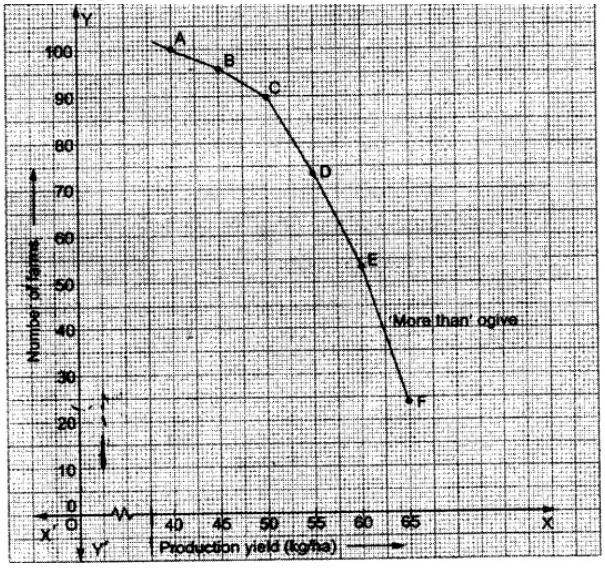
Hence, the required distance between the two aeroplanes is =1267.8 m.

40. We may prepare the 'more than' series as shown below:

| C.I. | c.f. |
|---|---|
| More than 65 | 24 |
| More than 60 | 54 |
| More than 55 | 74 |
| More than 50 | 90 |
| More than 45 | 96 |
| More than 40 | 100 |

On a graph paper, we plot the points A(40, 100), B(45, 96), C(50,90), D(55,74), E(60,54) and F(65,24).

Join all points freehand to get a 'More Than Ogive'.



**Solution**

**Class 10 - Mathematics (Basic)**

**Confidence Test (2019-20)**

**Section A**

1. **(a)** a rational number
   **Explanation:** $\left(1+\sqrt{2}\right)+\left(1-\sqrt{2}\right)$ = $1+\sqrt{2}+1-\sqrt{2}$ = 1 + 1 = 2 And 2 is a rational number.
   Therefore the given number is rational
2. **(d)** 120
   **Explanation:** Least positive integer divisible by 20 and 24 is
   LCM of (20, 24).
   $20=2^2\times5$
   $24=2^3\times3$
   ∴ LCM (20, 24) = $2^3.\ 3\ .\ 5$ = 120
   Thus 120 is divisible by 20 and 24.
3. **(b)** 3
   **Explanation:** Prime factorization of 864 = $32\times27$ = $2^5\times3^3$
   Therefore the exponent of 3 in the prime factorization of 864 is 3
4. **(c)** 5 cm
   **Explanation:** Since Tangents from an external point to a circle are equal.
   ∴ PE = EC = 3 cm and AB = AE = 8 cm
   Therefore, AE = AC - EC = 8 - 3 = 5 cm
5. **(d)** 3
   **Explanation:** Mean = $\frac{\sum f_ix_i}{\sum f_i}$
   $\Rightarrow3=\frac{3p+36}{15}$
   $\Rightarrow3p+36=45$
   $\Rightarrow$ 3p = 45 - 36
   $\Rightarrow3p=9$
   $\Rightarrow$ p=$\frac{9}{3}$
   $\Rightarrow p=3$
6. **(c)** $\frac{13}{25}$
   **Explanation:** Total number of balls = 25
   Number of Green and White balls = 4 +8 = 12
   Number of balls neither green nor white = 25 - 12 =13
   Number of possible outcomes = 13
   Number of total outcomes = 25
   ∴ Required Probability = $\frac{13}{25}$
7. **(c)** – 7
   **Explanation:** Given: $p\left(x\right)=x^3+7x^2-2x-14$
   If $\sqrt{2}$ and $-\sqrt{2}$ are the two zeroes of$p\left(x\right)$,
   then $\left(x-\sqrt{2}\right)$ and $\left(x+\sqrt{2}\right)$are
   the factors of $p\left(x\right)$. and also $\left(x-\sqrt{2}\right)\left(x+\sqrt{2}\right)=\left(x^2-2\right)$ is the factor of $p\left(x\right)$. ∴.
   $p\left(x\right)=x^3+7x^2-2x-14\Rightarrow p\left(x\right)=\left(x^2-2\right)\left(x+7\right)$

$$
\begin{array}{r|l}
x^2-1 & x+7 \\
\hline
x^3+7x^2-2x-14 & \\
x^3 \quad -2x & \\
- \quad + & \\
\hline
7x^2-14 & \\
7x^2-14 & \\
- \quad + & \\
\hline
0 &
\end{array}
$$

Therefore, the third zero is $x+7=0 \Rightarrow x=-7$

8. **(b)** 0
   **Explanation:** Let one zero be $\alpha$then the other zero will be $(-\alpha)$
   $\therefore$Sum of the zeroes = $\frac{-b}{a}$
   $\Rightarrow \alpha+(-\alpha)$
   = $\frac{42k^2}{14}$
   $\Rightarrow 0=\frac{42k^2}{14}$
   $\Rightarrow 42k^2=0$
   $\Rightarrow k=0$
9. **(d)** $\left(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3}\right)$
   **Explanation:** The centroid of a triangle whose vertices are $(x_1, y_1)$, $(x_2, y_2)$ and $(x_3, y_3)$ is given by$\left(\frac{x_1+x_2+x_3}{3}, \frac{y_1+y_2+y_3}{3}\right)$.
   It is the point of intersection of the three medians in the triangle. it is also called the centre of gravity of the triangle
10. **(b)** ( – 4, 6)
    **Explanation:** Given: $(x_1, y_1)=(-6,10)$, $(x_2, y_2)=(3,-8)$
    and $m_1 : m_2 = 2 : 7$
    $\therefore x=\frac{m_1x_2+m_2x_1}{m_1+m_2}$
    = $\frac{2\times3+7\times(-6)}{2+7}=\frac{6-42}{9}=\frac{-36}{9}=-4$
    And $y=\frac{m_1y_2+m_2y_1}{m_1+m_2}$ = $\frac{2\times(-8)+7\times10}{2+7}=\frac{-16+70}{9}=\frac{54}{9}=6$
    Therefore, the required coordinates are $(-4,6)$.
11. (0, 0)
12. no

    OR

    Intersecting or Coincident
13. $90^o$
14. 2
15. equilateral
16. We know that Sin30°=$\frac{1}{2}$, Sin45°= $\frac{1}{\sqrt{2}}$ = Cos45°, Cos30°=$\frac{\sqrt{3}}{2}$ ,putting these values in given expression, we get :-
    $\sin 45^\circ \sin 30^\circ+\cos 45^\circ \cos 30^\circ$
    $=\frac{1}{\sqrt{2}}\times\frac{1}{2}+\frac{1}{\sqrt{2}}\times\frac{\sqrt{3}}{2}$
    $=\frac{1}{2\sqrt{2}}+\frac{\sqrt{3}}{2\sqrt{2}}$
    $=\frac{1+\sqrt{3}}{2\sqrt{2}}$

    OR

    We consider,
    LHS= $\operatorname{cosec}\theta\sqrt{1-\cos^2\theta}$
    $=\operatorname{cosec}\theta\sqrt{\sin^2\theta}\left[\because 1-\cos^2\theta=\sin^2\theta\right]$
    $=\operatorname{cosec}\theta\sin\theta$
    $=\frac{1}{\sin\theta}\sin\theta\left[\because \operatorname{cosec}\theta=\frac{1}{\sin\theta}\right]$

= 1

= RHS

Hence identity is proved

17. Area of circle = $\pi r^2$

Let the radius of circle with centre C = R

According to question,Area of circle with centre C = $\pi(8)^2 + \pi(15)^2$

$\pi R^2$ = $\pi(8)^2 + \pi(15)^2$

or $64\pi + 225\pi = \pi R^2$

or, $\pi(64 + 225) = \pi R^2$

or, $R^2$ = 289

or, R = 17 cm

Circumference of circle

$= 2\pi r$

$= 2\pi \times 17$

$= 34\pi$ cm

18. Consider the set of ordered pairs

{(1,1)(1,2)(1,3)(1,4)(1,5)(1,6)

(2,1)(2,2)(2,3)(2,4)(2,5)(2,6)

(3,1)(3,2)(3,3)(3,4)(3,5)(3,6)

(4,1)(4,2)(4,3)(4,4)(4,5)(4,6)

(5,1)(5,2)(5,3)(5,4)(5,5)(5,6)

(6,1)(6,2)(6,3)(6,4)(6,5)(6,6)}

Clearly, there are 36 elementary events.

Therefore,Number of pairs of not getting 2 either time:

{(1,1)(1,3)(1,4)(1,5)(1,6)

(3,1)(3,3(3,4)(3,5)(3,6)

(4,1)(4,3)(4,4)(4,5)(4,6)

(5,1)(5,3)(5,4)(5,5)(5,6)

(6,1)(6,3)(6,4)(6,5)(6,6)}

Therefore, number of cases favourable to the event = 25

P(not getting 2 either time)= $\frac{number\ of\ pairs\ of\ not\ getting\ 2\ either\ time}{Total\ number\ of\ throws}$=$\frac{25}{36}$.

19. $\triangle AHK \sim \Delta ABC$

$\Rightarrow \frac{AK}{AC} = \frac{HK}{BC}$

$\Rightarrow \frac{10}{x} = \frac{7}{3.5}$, when AC = x cm

$\Rightarrow \quad x = \frac{10 \times 3.5}{7}$ = 5

$\therefore$ AC = 5 cm.

20. First 20 odd natural numbers are :-

1,3,5,7,..... upto 20 terms

So, it is an Arithmetic sequence with a =1,d =2

We know that,sum of n terms of an A.P. is given by:-

$S_n = \frac{n}{2}$ [ 2a + (n - 1)d ]

= $\frac{20}{2}$ [ 2×1 + (20 -1)×2 ]

= 10 [2 + 38] = 40×10 = 400

**Section B**

21. Number of possible outcomes are HH, TT, TH, HT

Number of possible outcomes = 4

i. P(atleast 2 head) = $\frac{3}{4}$

ii. P(one head and one tail) = $\frac{2}{4} = \frac{1}{2}$

22. Total number of envelopes $= 1000$

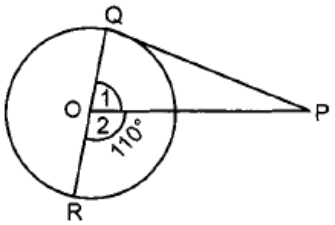
Let A = envelope contains no cash

Number of envelopes containing no cash $= 1000 - (10 + 100 + 200) = 690$

$\therefore$ P(A) = $\frac{690}{100} = \frac{69}{100} = 0.69$

23. Given PQ is a tangent to the circle with centre O from a point P.

QOR is a diameter of the circle and $\angle$POR =110$^o$




$\angle$POR = 110°

QR is the diameter of the circle.

$\Rightarrow \angle 1 + \angle 2 = 180°$ [Linear pair axiom]

$\Rightarrow \angle 1 + 110° = 180°$

$\Rightarrow \angle 1 = 70°$

$\angle OQP = 90^\circ$

In $\triangle$OPQ

$\angle 1 + \angle OQP + \angle QPO = 180^\circ$

$\Rightarrow 70^\circ + 90^\circ + \angle QPO = 180^\circ$

$\Rightarrow \angle OPQ = 180^\circ - 160^\circ$

$\Rightarrow \angle \mathrm{OPQ} = 20^\circ$

OR

We know that the radius and tangent are perpendicular at their point of contact

$\because \angle OBP = \angle OAP = 90^\circ$

Now, In quadrilateral AOBP

$\angle APB + \angle AOB + \angle OBP + \angle OAP = 360^\circ$

$\Rightarrow \angle APB + \angle AOB + 90^\circ + 90^\circ = 360^\circ$

$\Rightarrow \angle APB + \angle AOB = 180^\circ$

Since, the sum of the opposite angles of the quadrilateral is 180°

Hence, AOBP is a cyclic quadrilateral.

24. $\frac{\tan A}{1+\tan^2 A} = \frac{\sqrt{2}-1}{1+(\sqrt{2}-1)^2}$

$= \frac{\sqrt{2}-1}{1+2+1-2\sqrt{2}} = \frac{\sqrt{2}-1}{4-2\sqrt{2}} = \frac{\sqrt{2}-1}{2\sqrt{2}(\sqrt{2}-1)} = \frac{1}{2\sqrt{2}}$

$= \frac{1}{2\sqrt{2}}\frac{\sqrt{2}}{\sqrt{2}} = \frac{\sqrt{2}}{4}$

OR

L.H.S. $\sqrt{\frac{1+\sin A}{1-\sin A}}$

$= \sqrt{\frac{1+\sin A}{1-\sin A}} \times \sqrt{\frac{1+\sin A}{1+\sin A}}$

$= \sqrt{\frac{(1+\sin A)^2}{1-\sin^2 A}} \left[\because (a+b)(a-b) = a^2 - b^2\right]$

$= \sqrt{\frac{(1+\sin A)^2}{\cos^2 A}} \left[\because 1 - \sin^2\theta = \cos^2\theta\right]$

$= \frac{1+\sin A}{\cos A} = \frac{1}{\cos A} + \frac{\sin A}{\cos A} = \sec A + \tan A = R \cdot H.S.$

25. Clearly, AB = BC = CE = 3.5 cm and DE = 2 cm

$\Rightarrow$ CD = DE + EC = 2 + 3.5

= 5.5 cm

$\therefore$ Area of the shaded part

= Area of trapezium ABCD - Area of quadrant BCE

$= \left[\left\{\frac{1}{2}(AB+CD) \times BC\right\} - \left\{\frac{1}{4} \times \frac{22}{7} \times \frac{7}{2} \times \frac{7}{2}\right\}\right] \mathrm{cm}^2$

$= \left[\left\{\frac{1}{2}(3.5+5.5) \times 3.5\right\} - \frac{77}{8}\right] \mathrm{cm}^2$

$= \left[\left\{\frac{1}{2} \times 9 \times 3.5\right\} - \frac{77}{8}\right] \mathrm{cm}^2$

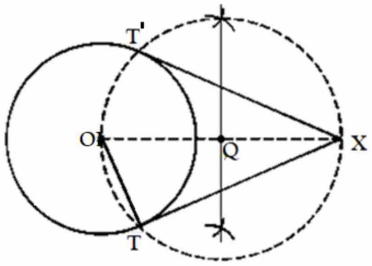
$= [15.75 - 9.625]\text{cm}^2$

= 6.125 $\text{cm}^2$

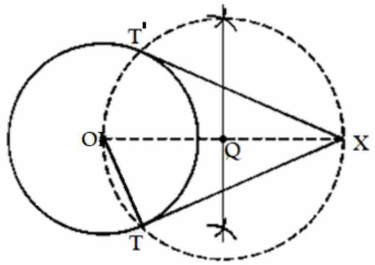
26. i. Quadratic polynomial
    ii. Biquadratic polynomial
    iii. Cubic polynomial
    iv. Linear polynomial
    v. Quadratic polynomial

**Section C**

27. Here, p(x) = $3x^2$ - 2.
    Now p(x) = 0
    $\Rightarrow \quad 3x^2 - 2 = 0$
    $\Rightarrow 3x^2 = 2$
    $\Rightarrow \quad x^2 = \frac{2}{3}$
    $\Rightarrow x = \pm\sqrt{\frac{2}{3}}$
    Therefore, zeroes are $\sqrt{\frac{2}{3}}$ and $-\sqrt{\frac{2}{3}}$.
    If p(x) = $3x^2$ - 2 , then a = 3, b = 0 and c = -2
    Now, sum of zeroes = $\sqrt{\frac{2}{3}} + \left(-\sqrt{\frac{2}{3}}\right)$ = 0 .... (i)
    Also, $\frac{-b}{a} = \frac{-0}{3} = 0$ ..... (ii)
    From (i) and (ii)
    Sum of zeroes= $\frac{-b}{a}$
    and product of zeroes = $\sqrt{\frac{2}{3}} \times -\sqrt{\frac{2}{3}} = \frac{-2}{3}$..... (iii)
    Also, $\frac{c}{a} = \frac{-2}{3}$..... (iv)
    From (iii) and (iv)
    Product of zeroes = $\frac{c}{a}$
28. To construct a circle of radius 4 cm and a pair of tangents to the circle from a point, say X, 9cm from its centre.
    To Find:The length of the tangents.




    Construction:
    Step 1. Draw a circle of radius 4 cm.
    Step 2. Make a point X at a distance of 9 cm from O, and join OX.
    Step 3. Draw a right bisector of X, intersecting OX at an angle of $90^0$ at Q.
    Step 4. Draw a circle to intersect the given circle at T and T`, taking Q as center and radius OQ = XQ.
    Step 5. Join XT and X`T` to get the required tangents.
    Hence, XT and X`T` are the tangents.




To find the length of the tangent, we know that OT⊥XT and △OXT is the right triangle.
Then,Since, OT = 4 cm and XO = 9 cm.
From △OXT, we have,
$XT^2 = OX^2 - OT^2 = 9^2 - 4^2$ [Using Pythagoras Theorem]
= 81 - 16 = 65
XT = $\sqrt{65}$ cm
∴ length of tangents = $\sqrt{65}$ cm

OR

We follow the following steps of construction.

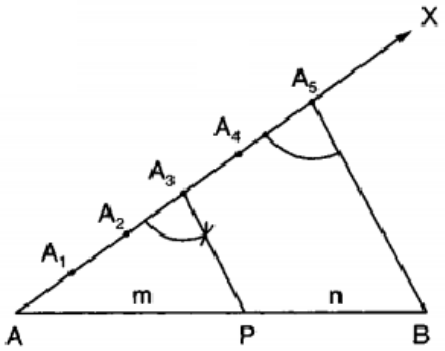
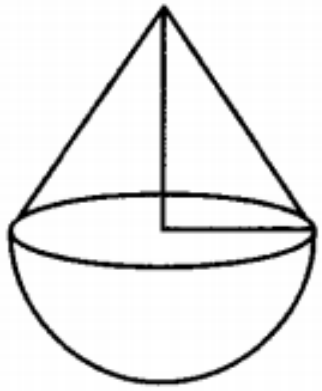


Fig. 9.2

**Steps of construction**
**STEP I** Draw a line segment AB = 10 cm by using a ruler.
**STEP II** Draw a ray AX making an acute angle$\angle BAX$ with AB.
**STEP III** Along AX, mark-off 5 (= 3 + 2) points $A_1$, $A_2$, $A_3$, $A_4$ and $A_5$ such that
$AA_1 = A_1A_2 = A_2A_3 = A_3A_4 = A_4A_5$.....(1)
**STEP IV** Join points B & $A_5$ .
**STEP V** Through $A_3$ draw a line $A_3P$ parallel to $A_5$ B by drawing angle $AA_3P$ equals to angle $AA_5B$. $A_3P$ intersects AB at point P. Since, $AA_3 : A_3A_5$ = 3:2 [from(1) & figure ] . Thus, AP : PB = 3:2. (due to symmetry )
Hence, point P divides AB internally in 3:2.

29.



Radius of cone = Radius of hemisphere = 21 cm
Let, height of cone = h cm
Given,
Volume of cone = $\frac{2}{3}\times$Volume of hemisphere
$\Rightarrow \quad \frac{1}{3}\pi r^2 h = \frac{2}{3} \times \frac{2}{3}\pi r^3$

$\Rightarrow \quad \frac{1}{3} \times \frac{22}{7} \times 21 \times 21 \times h = \frac{2}{3} \times \frac{2}{3} \times \frac{22}{7} \times 21 \times 21 \times 21$

$\Rightarrow \quad h = \frac{2 \times 2 \times 22 \times 21 \times 21 \times 21 \times 3 \times 7}{3 \times 3 \times 7 \times 22 \times 21 \times 21}$ = 28 cm

For cone,we have,

$l^2 = r^2 + h^2$

$\Rightarrow l^2 = 21^2 + 28^2$

$\Rightarrow l^2 = 441 + 784$

$\Rightarrow l = \sqrt{1225} = 35\text{cm}$

Therefore, Surface area of toy = Curved Surface area of cone + Curved Surface of hemisphere

$= \pi rl + 2\pi r^2$

$= \frac{22}{7} \times 21 \times 35 + 2 \times \frac{22}{7} \times 21 \times 21$

$= \frac{22}{7} \times 21[35 + 42]$

$= 22 \times 3 \times 77$

= 5082 $cm^2$

30. Take ,

LHS = $2(\sin^6\theta + \cos^6\theta) - 3(\sin^4\theta + \cos^4\theta) + 1$

$\Rightarrow$ LHS = $2\{(\sin^2\theta)^3 + (\cos^2\theta)^3\} - 3\{(\sin^2\theta)^2 + (\cos^2\theta)^2\} + 1$

Using $a^3 + b^3 = (a + b)^3 - 3ab(a + b)$ and $a^2 + b^2 = (a + b)^2 - 2ab$ in above expression, where $a = \sin^2\theta$ & $b = \cos^2\theta$ ; we get :-

LHS = $2\{(\sin^2\theta + \cos^2\theta)^3 - 3\sin^2\theta\cos^2\theta(\sin^2\theta + \cos^2\theta)\} - 3\{(\sin^2\theta + \cos^2\theta)^2 - 2\sin^2\theta\cos^2\theta\} + 1$

$\Rightarrow$ LHS = $2(1 - 3\sin^2\theta\cos^2\theta) - 3(1 - 2\sin^2\theta\cos^2\theta) + 1$ [Since, $\sin^2 A + \cos^2 A = 1$]

$\Rightarrow$ LHS = $2 - 6\sin^2\theta\cos^2\theta - 3 + 6\sin^2\theta\cos^2\theta + 1$

Hence, L.H.S. = 0 = R.H.S.

Hence, proved.

OR

Given, $\frac{\sec 39^\circ}{\text{cosec } 51^\circ} + \frac{2}{\sqrt{3}} tan17^\circ tan38^\circ tan60^\circ tan52^\circ tan73^\circ - 3(sin^2 31^\circ + sin^2 59^\circ)$

= $\frac{\sec 39^\circ}{\text{cosec}(90^\circ - 39^\circ)} + \frac{2}{\sqrt{3}}\tan 17°\tan 38°\tan 60°\tan(90° - 38°)\tan(90° - 17°) - 3(\sin^2 31° + \sin^2(90° - 31°))$

$= \frac{\sec 39^\circ}{\sec 39^\circ} + \frac{2}{\sqrt{3}}\tan 17°\tan 38° \times \sqrt{3} \times \cot 38° \times \cot 17° - 3(\sin^2 31° + \cos^2 31°)$

= $1 + \frac{2}{\sqrt{3}} \times \sqrt{3} \times 1 \times 1 - 3$ [$\because tan\theta.cot\theta = 1$]

$= 1 + 2 - 3$

$= 0$

31. $P(x) = a^8 - b^8 = \left(a^4 + b^4\right)\left(a^4 - b^4\right)$

$= \left(a^4 + b^4\right)\left(a^2 + b^2\right)\left(a^2 - b^2\right)$

$= \left(a^4 + b^4\right)\left(a^2 + b^2\right)(a + b)(a - b)$

$Q(x) = (a + b)\left(a^4 - b^4\right)$

$= (a + b)\left(a^2 + b^2\right)\left(a^2 - b^2\right)$

$= (a + b)\left(a^2 + b^2\right)(a + b)(a - b)$ {Using Identity $a^2 - b^2 = (a + b)(a - b)$}

Common factors: $\left(a^2 + b^2\right), (a - b), (a + b)$

Uncommon factors: $\left(a^4 + b^4\right), (a + b)$

$\therefore LCM$ of $P(x)$ and $Q(x)$

$= \left(a^2 + b^2\right)(a - b)(a + b) \times \left(a^4 + b^4\right)(a + b)$

$= \left(a^4 + b^4\right)\left(a^2 + b^2\right)(a + b)^2(a - b)$

OR

Let us find the HCF of 441 and 567 by using Euclid's lemma.

Applying Euclid's division lemma to 441 and 567, we obtain

567 = 441 × 1 + 126

441 = 126 × 3 + 63

126 = 63 × 2 + 0

The remainder at this stage is 0. So, the divisor at the previous stage i.e., 63 is the HCF of 441 and 567.

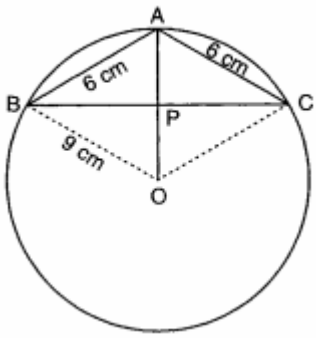
Now, we use Euclid's division lemma to find the HCF of 63 and 693. We observe that

693 = 63 × 11 + 0

So, the HCF of the third number 693 and 63 (the HCF of first two numbers 441 and 567 is 63).

Hence, the HCF of 441, 567 and 693 is 63.

32.




Let O be the centre of the circle and let P be the mid-point of BC. Then ,$OP \perp BC$

Since Δ ABC is isosceles and P is the mid-point of BC. Therefore, $AP \perp BC$ as median from the vertex in an isosceles triangle is perpendicular to the base.

Let A P = x and PB = CP = y.

Applying Pythagoras theorem in Δ APB and Δ OPB, we have

$AB^2 = BP^2 + AP^2$

and, $OB^2 = OP^2 + BP^2$

$\Rightarrow \quad 36 = y^2 + x^2$ .....(i)

and, $81 = (9 - x)^2 + y^2$ ...(ii)

$\Rightarrow 81 - 36 = [(9 - x)^2 + y^2\ ] - (y^2 + x^2)$[Subtracting (i) from (ii)]

$\Rightarrow 45 = 81 - 18x$

$\Rightarrow$ x = 2 cm, therefore AP = x = 2 cm .....(iii)

Putting x = 2 in (i), we get

$36 = y^2 + 4 \Rightarrow y^2 = 32 \Rightarrow y = 4\sqrt{2}$ cm

Therefore,BC = 2BP = 2y = $8\sqrt{2}$ .cm .....(iv)

Therefore,

Area of Δ ABC

= $\frac{1}{2}$BC × AP

= $\frac{1}{2}$× 2y × x [ from (iii) & (iv) ]

= xy

= 2 × 4√2 = 8√2 $cm^2$.

33. i. Given: A(3, 4), B(6, 7), C(9, 4), D(6, 1)

Using distance formula,

AB = $\sqrt{(6-3)^2+(7-4)^2} = 3\sqrt{2}$ units

BC = $\sqrt{(9-6)^2+(4-7)^2} = 3\sqrt{2}$ units

CD = $\sqrt{(6-9)^2+(1-4)^2} = 3\sqrt{2}$ units

DA = $\sqrt{(3-6)^2+(4-1)^2} = 3\sqrt{2}$ units

AC = $\sqrt{(9-3)^2+(4-4)^2} = 6$ units

BD = $\sqrt{(6-6)^2+(1-7)^2} = 6$ units

As sides AB = BC = CD = DA, and diagonals AC and BD are equal, so ABCD is a square.

Now as diagonals of a square bisect each other, so midpoint of the diagonal gives the position of Anjali to sit in the middle of the four students.

Here diagonal is AC or BD.

So, mid-point of AC = $\left(\frac{3+9}{2}, \frac{4+4}{2}\right)$ = (6, 4)

So, position of Anjali is (6, 4).

ii. Position of Sita is at point A i.e. (3, 4) and Position of Anita is at point D i.e. (6, 1).
So, distance between Sita and Anita, AD = $\sqrt{(6-3)^2+(1-4)^2} = 3\sqrt{2}$ units

iii. Now, Gita is at position B and as BA and BC are equal and equidistant from point B.
So, we can say Sita and Rita are the two students who are equidistant from Gita.

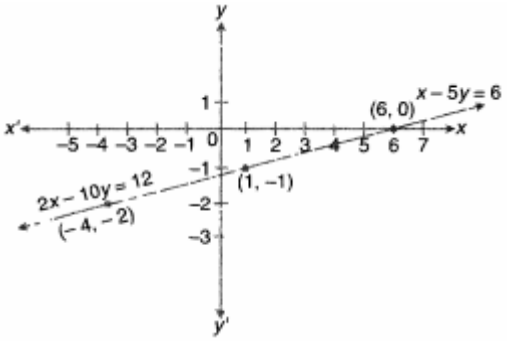
34. Given, x - 5y = 6 or x = 6 + 5y

| | | | |
|---|---|---|---|
| x | 6 | 1 | -4 |
| y | 0 | -1 | -2 |

Thus when x = 6, y = 0
when x = 1, y = -1
when x = -4, y = -2
and 2x - 10y = 12 or x = 5y + 6

| | | | |
|---|---|---|---|
| x | 6 | 1 | -4 |
| y | 0 | -1 | -2 |

when x = 6, y =0
when x = 1, y = -1
when x = -4,y = -2




Since the lines are coincident, so the system of linear equations is consistent with infinite many solutions

**Section D**

35. Given, $\frac{1}{(x-1)(x-2)} + \frac{1}{(x-2)(x-3)} = \frac{2}{3}$

$\frac{(x-3)+(x-1)}{(x-1)(x-2)(x-3)} = \frac{2}{3}$

$\frac{x-3+x-1}{(x-1)(x-2)(x-3)} = \frac{2}{3}$

$\frac{2x-4}{(x-1)(x-2)(x-3)} = \frac{2}{3}$

$\frac{2(x-2)}{(x-1)(x-2)(x-3)} = \frac{2}{3}$

$\frac{2}{(x-1)(x-3)} = \frac{2}{3}$

(x - 1) (x - 3) = 3

$x^2$ - 4x + 3 = 3

$x^2$ -4x = 0

x(x - 4) = 0

x = 0 , x - 4= 0

x = 0, x = 4

36. We are given that,

$a_5 + a_9 = 72$

$\therefore$ a + 4d + a + 8d = 72

$\Rightarrow$ 2a + 12d = 72 ..(i)

and $a_7 + a_{12} = 97$

$\Rightarrow$ 2a + 17d = 97 ..(ii)

on equating (i) and (ii), we get

5d = 25

d = 5

put d = 5 in eq. (i)

$\Rightarrow$ 2a + 12(5) = 72

$\Rightarrow$ 2a + 60 = 72

$\Rightarrow$ 2a = 72 - 60

$\Rightarrow$ 2a = $\frac{12}{2}$

$\Rightarrow$ a = 6

then,

$a_1$ = 6 , $a_2$ = 11, $a_3$ = 16, $a_4$ = 21,. so on

$\therefore$ AP is 6, 11, 16, 21, ...

OR

Given, a = 1, d = 4 -1 = 3.

Let number of terms in the series be n.

$\therefore \quad S_n = \frac{n}{2}[2a + (n-1)d]$

$\therefore \quad \frac{n}{2}[2 \times 1 + (n-1)3] = 287$

or, $\frac{n}{2}[2 + (3n-3)] = 287$

or, $n[3n-1] = 574$

or, $3n^2 - n - 574 = 0$

$3n^2 - n - 574 = 0$

$3n(n-14) - 41(n-14) = 0$

$(n-14)(3n-41) = 0$

n - 14 = 0 or 3n - 41 = 0

n = 14 or 3n = 41

The 14th term is x.

$\therefore a + (n-1)d = x$

1 + 13 $\times$ 3 = x

$1 + 39 = x$

x = 40

37. Let h is height of big building,here as per the diagram.

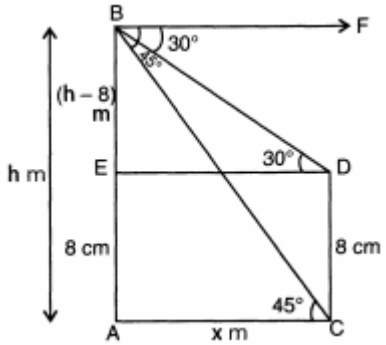
AE = CD = 8 m (Given)

BE = AB-AE = (h - 8) m

Let AC = DE = x

Also, $\angle FBD = \angle BDE = 30^\circ$

$\angle FBC = \angle BCA = 45^\circ$




In $\triangle$ACB, $\angle A = 90^\circ$

$\tan 45^\circ = \frac{AB}{AC}$

$\Rightarrow$ x = h, ...(i)

In $\triangle$BDE, $\angle E = 90^\circ$

$\tan 30^\circ = \frac{BE}{ED}$

$\Rightarrow \quad x = \sqrt{3}(h-8)$ .(ii)

From (i) and (ii), we get

$h = \sqrt{3}h - 8\sqrt{3}$

h(√3 - 1) = 8√3

h = $\frac{8\sqrt{3}}{\sqrt{3}-1} = \frac{8\sqrt{3}}{\sqrt{3}-1} \times \frac{\sqrt{3}+1}{\sqrt{3}+1}$

= $\frac{1}{2} \times (24 + 8\sqrt{3}) = \frac{1}{2} \times (24 + 13.84) = 18.92m$

Hence height of the multistory building is 18.92 m and the distance between two buildings is 18.92 m.

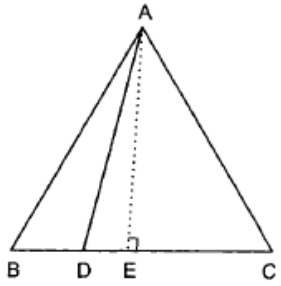
38. Let ABC be an equilateral triangle and let D be a point on BC such that $BD = \frac{1}{3}BC$. Draw $AE \perp BC$. Join AD.

In ΔAEB, and ΔAEC, we have AB = AC,

∠AEB = ∠AEC = 90°

and, AE = AE

So, by RHS-criterion of similarity, we have




ΔAEB ~ ΔAEC

⇒ BE = EC

Thus, we have

$BD = \frac{1}{3}BC, DC = \frac{2}{3}BC$ and $BE = EC = \frac{1}{2}BC$ ...(1)

Since ∠ C = 60°. Therefore, ΔADC is an acute triangle.

$\therefore \quad AD^2 = AC^2 + DC^2 - 2DC \times EC$

$\Rightarrow \quad AD^2 = AC^2 + \left(\frac{2}{3}BC\right)^2 - 2 \times \frac{2}{3}BC \times \frac{1}{2}BC$ [Using(1)]

$\Rightarrow \quad AD^2 = AC^2 + \frac{4}{9}BC^2 - \frac{2}{3}BC^2$

$\Rightarrow \quad AD^2 = AB^2 + \frac{4}{9}AB^2 - \frac{2}{3}AB^2$ [$\because$ AB = BC= AC]

$\Rightarrow \quad AD^2 = \frac{9AB^2+4AB^2-6AB^2}{9} = \frac{7}{9}AB^2$

⇒ 9 $AD^2$ = 7$AB^2$

ALITER: Draw $AE \perp BC$. Triangle ABC is equilateral. Therefore, E is the mid-point of BC.

$\therefore \quad BE = CE = \frac{1}{2}BC.$

Applying Pythagoras theorem in right triangles AEB and AED, we obtain

$AB^2$ = $AE^2$ + $BE^2$ and $AD^2$ = $AE^2$ + $DE^2$

⇒ $AB^2$ - $AD^2$ = ($AE^2$ + $BE^2$) - ($AE^2$ + $DE^2$)

⇒ $AB^2$ - $AD^2$ = $BE^2$ - $DE^2$

$\Rightarrow \quad AB^2 - AD^2 = \left(\frac{1}{2}AB\right)^2 - \left(\frac{1}{6}AB\right)^2 \left[\because DE = BE - BD = \frac{1}{2}AB - \frac{1}{3}AB = \frac{1}{6}AB\right]$

$\Rightarrow \quad AB^2 - AD^2 = \frac{2}{9}AB^2 \Rightarrow \frac{7}{9}AB^2 = AD^2$

$\Rightarrow 9AD^2 = 7AB^2$

OR

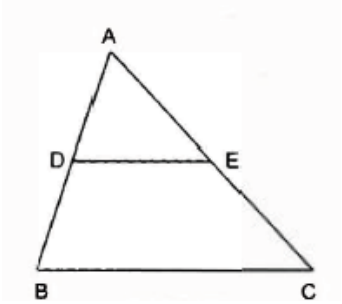
We have,

Area (ΔADE) = Area (trapezium BCED)

⇒ Area (ΔADE)+ Area (ΔADE) = Area (trapezium BCED) + Area (ΔADE)

⇒ 2 Area (ΔADE)= Area (Δ ABC) ...(i)

In ΔADE and ΔABC, we have




$DE \| BC, therefore, \angle ADE = \angle B$[Corresponding angles]

and, ∠A = ∠A [Common]

∴ ΔADE~ ΔABC

Since for similar triangles ,the ratio of the areas is the square of the ratio of their corresponding sides.Therefore,

$\frac{\text{Area }(\Delta ADE)}{\text{Area }(\Delta ABC)} = \frac{AD^2}{AB^2}$

$\Rightarrow \quad \frac{\text{Area }(\Delta ADE)}{2\text{ Area }(\Delta ADE)} = \frac{AD^2}{AB^2}$

$\Rightarrow \quad \frac{1}{2} = \left(\frac{AD}{AB}\right)^2$

$\Rightarrow \quad \frac{AD}{AB} = \frac{1}{\sqrt{2}}$

$\Rightarrow \quad AB = \sqrt{2}AD$

$\Rightarrow \quad AB = \sqrt{2}(AB - BD)$

$\Rightarrow \quad (\sqrt{2}-1)AB = \sqrt{2}BD \Rightarrow \frac{BD}{AB} = \frac{\sqrt{2}-1}{\sqrt{2}} = \frac{2-\sqrt{2}}{2}$

39. Diameter of cylindrical pipe = 7 cm

∴ Radius of cylindrical pipe = $\frac{7}{2}$cm = 3.5 cm

Volume of water flows in 1 min = 192.5 litres

Volume of water that flows per hour = $(192.50 \times 60)$litres

$= (192.50 \times 60 \times 1000)\text{cm}^3$ .....(I)

Let h cm be the length of the column of water that flows in one hour.

Clearly, water column forms a cylinder of radius 3.5 cm and length h cm.

∴ Volume of water that flows in one hour

= $\pi r^2$ h

Volume of the cylinder of radius 3.5 cm and length h cm

$= \left[\frac{22}{7} \times (3.5)^2 \times h\right] \text{cm}^3$ ...(ii)

From (i) and (ii), we have

$\pi r^2$ h = 192.50 × 60 × 1000

$\frac{22}{7} \times 3.5 \times 3.5 \times h = 192.50 \times 60 \times 1000$

$\Rightarrow \quad h = \frac{192.50 \times 60 \times 1000 \times 7}{22 \times 3.5 \times 3.5}$cm = 300000 cm = 3 km

Hence, the rate of flow of water is 3 km per hour.

OR

By the question,Water is flowing at the rate of 15 km/hr through a cylindrical pipe of diameter 14 cm into a cuboidal pond which is 50 m long and 44 m wide

Speed of water flowing through the pipe

$= 15\text{km/hr} = 15000\text{m/hr}$

Volume of water flowing in 1 hr

$= \pi R^2 H$

$= \frac{22}{7} \times \frac{7}{100} \times \frac{7}{100} \times 15000\text{m}^3$

$= 231\text{m}^3$

Volume of water in the tank when the depth is 21 cm

$= lbh = 50 \times 44 \times \frac{21}{100}\text{m}^3$

$= 462\text{m}^3$

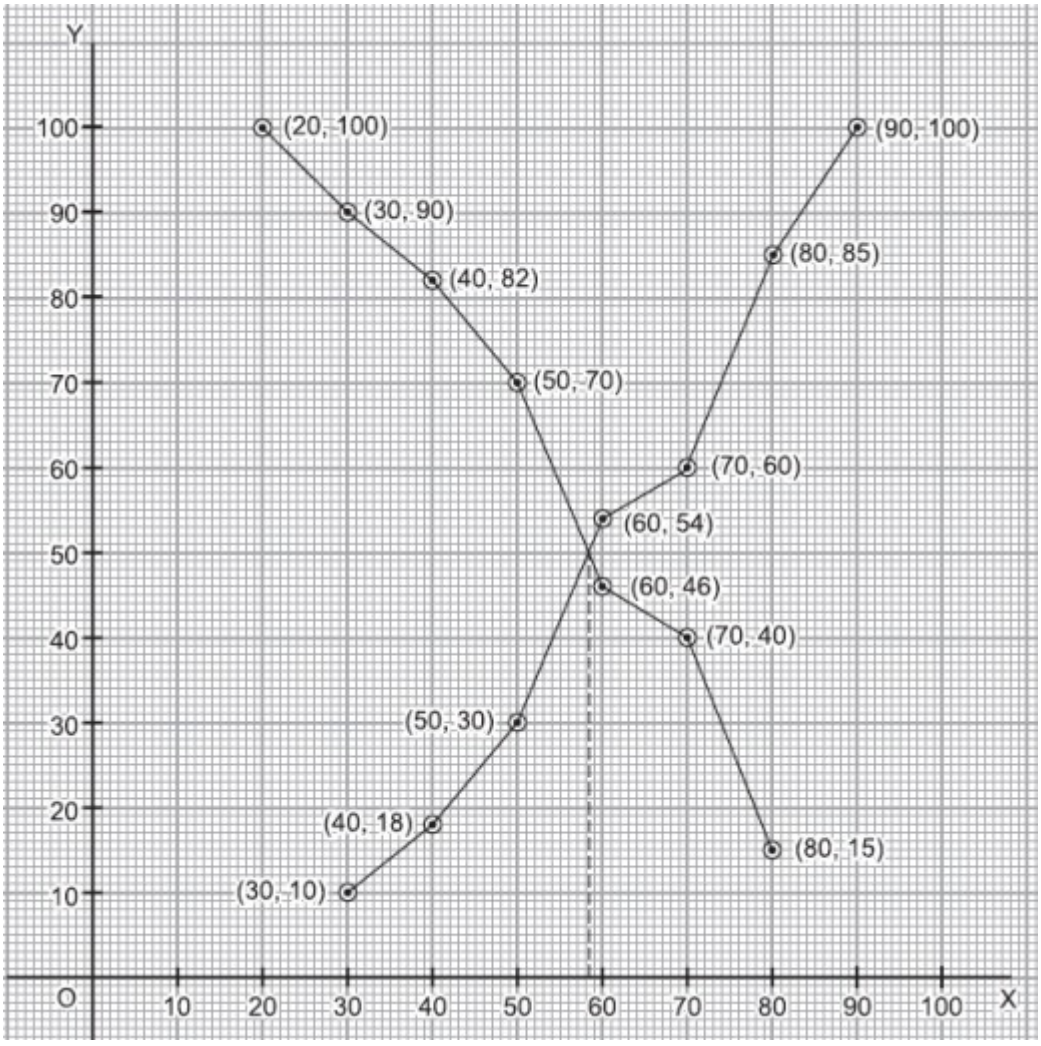
∴ Time taken to fill $462\text{m}^3$

$= \frac{462}{231} = 2\text{hrs}$

40.

| Class Interval | Frequency | less than | c.f. | More than | c.f. |
|---|---|---|---|---|---|
| 20-30 | 10 | less than 30 | 10 | more than 20 | 100 |
| 30-40 | 8 | less than 40 | 18 | more than 30 | 90 |
| 40-50 | 12 | less than 50 | 30 | more than 40 | 82 |
| 50-60 | 24 | less than 60 | 54 | more than 50 | 70 |
| 60-70 | 6 | less than 70 | 60 | more than 60 | 46 |
| 70-80 | 25 | less than 80 | 85 | more than 70 | 40 |
| 80-90 | 15 | less than 90 | 100 | more than 80 | 15 |

**Plotting the points:**




From the graph, median = 58.3

## Solution

## Class 10 - Science

## CONFIDENCE EXAMINATION-I 2019-2020

### Section A

1. **(a)** combination reaction
   **Explanation:** A combination reaction (also known as a synthesis reaction) is a reaction where two or more elements or compounds (reactants) combine to form a single compound (product).
   $CaO + H_2O \rightarrow Ca(OH)_2$
   So, it is combination reaction.

   OR

   **(a)** $NO_2$ , $O_2$
   **Explanation:** A decomposition reaction takes place on heating $Pb(NO_3)_2$ to form PbO, $NO_2$ and $O_2$.
   Lead (II) nitrate → Lead (II) oxide + Nitrogen dioxide + Oxygen
   $2\ Pb(NO_3)_2\ (s) \rightarrow 2\ PbO\ (s) + 4\ NO_2\ (g) + O_2\ (g)$
2. **(d)** Hydroxide ions
   **Explanation:** Any compound behaves as a base when it dissociates hydroxide ions ($OH^-$) in its solution.
3. **(b)** 16 mL
   **Explanation:** 10 mL of NaOH neutralises 8mL of HCl
   i.e. 1 mL of NaOH neutralises $\frac{8}{10}$mL of HCl
   so, 20 mL of NaOH will neutralise $\frac{8}{10} \times 20$= **16mL of HCl**
4. (i) By painting the surface of metal.
   (ii) By oiling or greasing the surface of metal.
   (iii) Electroplating iron with nickel, chromium etc.
5. Heating of an ore in the absence of air below its meeting point is called calcinations.
   It is used to convert the carbonate or hydrated oxide to oxide ore.
   $ZnCO_3(s) \rightarrow ZnO(s) + CO_2(g)$
6. The second member of the alkyne family is **propyne**. Its structural formula is $H_3C - C \equiv CH$
   The first member of the alkyne family is ethyne. Ethyne contains 2 carbon atoms. Hence, the second member is propyne.
7. (i) $CH_3OH$ : Methanol
   (ii) $CH_3COOH$ : Ethanoic acid
8. Chlorophyll is a green coloured pigment found in the green leaves or green parts of the plant which traps solar energy and helps in the process of photosynthesis.
9. The tissue through which water and minerals are transported in plants xylem
10. Adrenaline prepares the body to face emergency by decreasing sensory threshold, increase force and rate of heartbeat to increase cardiac output and raises blood glucose level.
11. Iodised salt in the diet is advisable because it contains iodine, which is an essential element for the synthesis of thyroxine hormone secreted from thyroid gland. The deficiency of iodine in the diet causes goitre.
12. Urethra is a tubular passage for the exit of sperms and urine in mammals.
13. The umbilical cord is the connection between mother and the baby. It connects the foetus to placenta. It contains blood vessels which supply blood between the foetus and the placenta.
14. Sexually reproducing organisms will show more variations as genetic material is exchanged between homologous pair of chromosomes during cross over in meiosis. Also, since 2 parents contribute half the chromosome number which restores after fertilization, it generates a new recombination. However, during asexual reproduction DNA replication is the only means of variation and errors during DNA replication in interphase stage during mitosis, are not very common and frequent which may lead to variation but is negligible.
15. Myopia or short-sightedness. The concave lens should be used to correct his vision.

16. Voltmeter is always connected in parallel to the ends of the resistor across which the potential difference is required to be measured.

OR

The flow of electric charges across a cross-section of a conductor constitutes an electric current. For example, a stream of electrons moving through a conducting wire constitutes an electric current.

17. Using Fleming's right-hand rule,
    a. The direction of the induced current is anti-clockwise.
    b. The direction of the induced current is clockwise.
18. We can calculate the amount of energy present at each trophic level by 10 percent llaw. Energy present in hawks is 20 J, in snakes, it is 20 $\times$ 10 = 200 J, in rats it is 200 $\times$ 10 = 2000J and in plants amount of energy is 2000 $\times$ 10 = 20000J.
19. **(b)** Concave mirror
    **Explanation:** Because the screen is on the same side of the object which means it is never a lens becoz it happens behind the lenses in such case. Moreover Concave mirror forms real images i.e. image can be obtained on a screen.
20. **(c)** the screen in the direction of the lens or the lens in the direction of the screen
    **Explanation:** The candle is closer to the lens when compared to the distant lamp. Hence, the image of the candle will be farther away from the lens when compared to the image of the distant lamp. As the image will be more close to focus as the distance of the object is larger.

**Section B**

21. In a combination reaction, two or more substances simply combine to form a new substance, e.g., magnesium combines with oxygen to give magnesium oxide.
    $2\ Mg + O_2 \rightarrow 2MgO$

    In a decomposition reaction, a single compound breaks down to produce two or more simpler substances, e.g., calcium carbonate on heating decomposes to calcium oxide and carbon dioxide.
    $CaCO_3 \xrightarrow{Heat} CaO + CO_2$
22. The chemical formula of bleaching powder is **$CaOCl_2$.**

    Bleaching powder is prepared by passing chlorine gas over dry slaked lime:
    $Ca(OH)_2$ (s) + $Cl_2$ (g) $\rightarrow$ $CaOCl_2$ (s) + $H_2O$ (l)

    Bleaching powder is used for disinfecting drinking water supply.

    OR

    (a) It can be done by adding a strip of blue litmus paper into a tube containing a small amount of sample water if the colour changes into red, this means that some acid has gone into the river.
    (b) The acid has reacted chemically with the drain cover which is usually made of iron. The correct word is corrosion.
    (c) Iron reacts with an acid $(H_2SO_4 \text{or} HCl)$ to evolve $H_2$ gas. Since the gas is released immediately accompanied by large number of bubbles Fizzing of detain covers is expected.
23. i. This reaction will occur in which zinc displaces copper from copper sulphate because zinc is more reactive than copper.
    ii. This reaction will not occur as iron is less reactive than zinc.
    iii. This reaction will occur in which zinc displaces iron because zinc is more reactive than iron.
24. Metal reacts with water to give hydrogen gas. some metals which give reaction with water are as follows:
    i. With cold water
    $\underset{Sodium}{2Na(s)} + \underset{Cold}{2H_2O(l)} \rightarrow \underset{Sodium\ hydroxide}{2NaOH(aq)} + \underset{hydrogen}{H_2(g)}$
    ii. With hot water
    $\underset{Magnesium}{Mg(s)} + \underset{(Hot)}{2H_2O(l)} \rightarrow \underset{Magnesium\ hydroxide}{Mg(OH)_2\,(aq)} + \underset{hydrogen}{H_2(g)}\uparrow$
    iii. With steam
    $\underset{Iron(II)\ or\ ferrous}{Fe(s)} + \underset{(steam)}{H_2O(g)} \rightarrow \underset{Iron\ (II)\ oxide}{FeO(s)} + H_2\,(g)\uparrow$

$$\underset{Iron\ (III)\ or\ ferric\ )}{2Fe(s)} + 3H_2O \rightarrow \underset{Iron\ (III)\ oxide}{Fe_2O_3(s)} + 3H_2(g)\uparrow$$

$$3Fe(s) + 4H_2O(g) \rightarrow \underset{Iron\ (II,\ III)\ oxide}{Fe_3O_4\ (s)} + 4H_2\ (g)\uparrow$$

- The increasing order of reactivity of these metals is Fe<Mg<Na
- Gold and silver do not react with any form of water they are least reactive metals.

25. The first step of breaking down glucose into pyruvate is the same in all.
    Then, in the absence of oxygen, pyruvate changes into ethanol ,$CO_2$ , energy. Ex - yeast
    When there is a lack of oxygen in our muscle cells, pyruvate changes into lactic acid and energy.
26. Steps of Nutrition in amoeba-
    a) Formation of pseudopodia- When Amoeba comes in contact with a food particle, it forms finger-like projections called the pseudopodia which envelops food particles. This process is called phagocytosis.
    b) Ingestion- The tips of pseudopodia fuse with each other, together with variable amount of food particles and water, to form a food vacuole, this process is known as ingestion.
    c) Digestion- The vacuoles are surrounded by lysosomes which fuses with vacuole and digest the food particles present in vacuole.
    d) Exocytosis- The soluble products of digestion are passed into the cytoplasm from the food vacuole. The remaining undigested materials are passed out of the body with the help of a process called exocytosis.
27. Let the dominant trait be represented by PP.
    Let the recessive trait be represented by pp.
    Parents PP $\times$ pp
    $F_1$-generation ($p_p$) ($p_p$) ($p_p$) ($p_p$) i.e. all pink colour flowers, but hybrid. i.e. none are pure homozygous all the progeny has heterozygous combination, but since, pink is dominant over white, all are pink.
    $F_2$-generation when self-fertilised ($p_p$) $\times$($p_p$)
    $F_2$-generation gives (PP) (Pp) (Pp) (pp)
    Ratio 3 pink colour flowers : 1 white colour flower.

    OR

    The characteristics which get transmitted from parents to their offspring are called Inherited traits. These traits are controlled by genes. In humans, eye color is an example of an INHERITED TRAIT.
28. i. Convex mirror is used as a review mirror because:
        a. It gives a wider field of view as it is curved outwards and
        b. It produces erect and diminished image of the traffic behind the driver of the vehicle.
    ii. Concave mirror is used as a shaving mirror to see a large size image of the face. When the object lies in between pole and principle focus of a concave mirror, it forms a virtual, erect and enlarged image behind it.
29. No, two magnetic field lines can ever intersect each other. If they do, then it would mean that at the point of intersection there are two directions of magnetic field, which is not possible.

    OR

    As the current flowing through the wire will cause resistance, higher the current higher is the resistance then heat produced will be large and it will damage the cable or wire. So, the lower current is transmitted to avoid the damage to cable by heat, and it will also reduce the cost of transmission as the lower value of current will require less cross-sectional area and to keep the power same, the voltage has to be high which can be understood by the relation:
    Power = Voltage * Current
30. Wastes pollute air, soil and water, and cause harmful effects on all living organisms . If waste is not properly segregated into biodegradable and non-biodegradable it will pollute environment and also, hamper the process of decomposition. If the waste is disposed off near a residential area and is not covered properly, it can create a problem of stench in the surrounding and lead to various health issues.

**Section C**

31. i. The compounds that are made up of carbon and hydrogen atoms are called hydrocarbons, e.g. methane ($CH_4$), ethane ($CH_2 = CH_2$). Ethyne ($C_2H_2$), cyclohexane ($C_6H_{12}$), benzene ($C_6H_6$)etc.

ii. In saturated hydrocarbons, all the four valencies of carbon are satisfied by a single covalent bond while in unsaturated hydrocarbons, double or triple bonds are required to satisfy the valencies of carbon, e.g.

a. Saturated hydrocarbons
Methane ($CH_4$), Ethane ($CH_3 — CH_3$)

b. Unsaturated hydrocarbons
Ethene ($H_2C = CH_2$), Ethyne ($HC \equiv CH$)

iii. A functional group is an atom or group of atoms that define the structure (or the properties) of organic compounds. The four examples are:

a. -OH Alcohol
b. -COOH Carboxylic acid
c. -CHO Aldehyde
d. -X Halogen

OR

| Soaps | Synthetic detergents |
|---|---|
| 1) Soaps are sodium or potassium salts of higher fatty acids e.g. sodium stearate. | 1) Synthetic detergents are sodium alkyl sulphates or sodium alkyl benzene sulphonates e.g. sodium n-dodecylsulphate. |
| 2) Soaps are prepared from vegetable oils animal and fats. | 2) Synthetic detergents are prepared from the hydrocarbons obtained from petroleum. |
| 3) Soaps have relatively weak cleansing action. | 3) They have strong cleansing action. |
| 4) Soaps form curdy white precipitate with calcium and magnesium salts present in hard water and hence, are not used in hard water. | 4) Calcium and magnesium salts of detergents are soluble in water and therefore, no curdy white precipitates are obtained in hard water and hence synthetic detergents can be used even in hard water. |
| 5) Soaps cannot be used in acidic medium as they are decomposed into carboxylic acids in acidic medium. | 5) They can be used in acidic medium as they are the salts of strong acids and are not decomposed in acidic medium. |
| 6) Soaps do not cause water pollution. | 6) Synthetic detergents cause water pollution. |
| 7) Soaps are biodegradable. | 7) Some of the synthetic detergents are not biodegradable. |

32. Selye in 1948 defined hormones as "Physiological and organic compounds produced by certain cells (endocrine glands) for the sole purpose of directing the activities of distant parts of the same organism." They are also referred to as "chemical messengers". They have excitatory effects on some organs and inhibitory effects on others.
Functions of hormones:
1) Hormones stimulate the tissue activity.
2) Hormones regulate growth and reproduction.
3) Hormones control metabolism.
4) Hormones synthesize, store and utilize substances like glucose.
5) Hormones conserve water and minerals.

33. i. A- Bryophyllum - Via Budding type of Vegetative propagation (Asexual reproduction). B- Plasmodium - Multiple fission

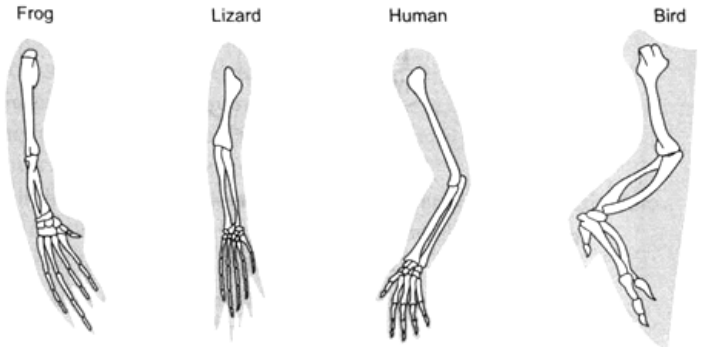
ii. Spore formation benefits are that spore can survive under unfavourable condition because of protective covering. Also, interaction between 2 parents are not needed. And importantly, it is so light weighted that possibility of dispersion by other agents are increased.

iii. Budding and regeneration.
Budding is a process in which a bud develops as an outgrowth due to repeated cell divisions at a specific site. This bud develops, gets matured and detaches from the parent cell to become a new individual.
Regeneration: It takes place as specialised cells divide to form large number of cells, undergo differentiation to become various cell types and tissues.

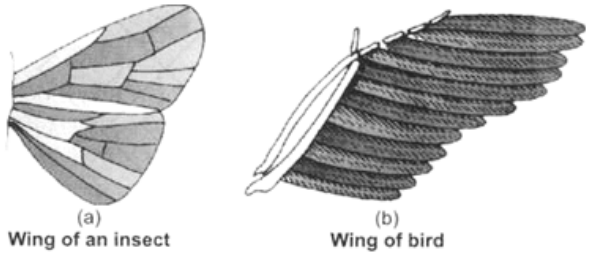
OR

The following are the various evidences in favour of evolution:

i. Homologous organs: Organs with a common basic structural design but with different functions are said to be homologous organ. For example, forelimbs of a frog, lizard, bird and man. The forelimbs of man are used for grasping, of lizard for running, of frog for hopping up and bird for flying. They have different functions but have same structural pattern.




ii. Analogous organs: The analogous organs have different basic structure but perform similar functions. For example, the wing of insects and the wing of birds, have a totally different anatomy and origin but they perform the same function of flying in air.




iii. Evidences from fossils: The fossils also provide evidences for evolution. For example, the fossil Archaeopteryx looks like a bird but it bears a number of other features, which are found in reptiles. This observation provides a clue that birds have evolved from reptiles.

34. i. u = - 60 cm, f = - 30 cm, v = ?

$\frac{1}{f} = \frac{1}{v} - \frac{1}{u}$ ( By using lens formula)

$\therefore \quad \frac{1}{v} = \frac{1}{f} + \frac{1}{u}$

$= \frac{1}{(-30)} + \frac{1}{(-60)} = \frac{-3}{60}$

$\therefore$ v = - 20 cm

ii. (i) Nature of image: Virtual

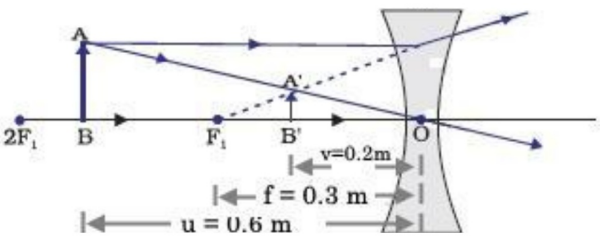
(ii) Position: 20 cm from lens on the same side as the object.

(iii) $m = v/u = \frac{-20}{-60} = \frac{1}{3}$

So, the size of the image is one-third of the object.

(iv) Image is Erect

iii. The ray diagram is shown below:




35. i. The 3 common refractive defects of vision are

a. Myopia (or nearsightedness) It is corrected by using concave lenses of appropriate power which diverge the refracted rays and thus the image will be formed onto the retina instead of in front of retina.

b. Hypermetropia (or farsightedness) It is corrected by using convex lenses of appropriate power which act as converging lens and the image is received onto retina not beyond it.

c. Presbyopia which is caused by ciliary muscle defect and corrected by using bifocal lenses of appropriate power in which the upper part consists of a concave lens (to correct myopia) and lower part consists of convex lens (to correct hypermetropia).

ii. Eyes of a dead person can be donated to the person having corneal blindness, it will help him/her to see the world. We can register ourselves and also encourage others also to register to eye donation camps who can preserve our eyes after our death and donate them to the needy.

36. (a) For filament of electric lamp we require a strong metal with high melting point. Tungsten is used exclusively for filament of electric lamps because its melting point is extremely high $(3410^{o}C)$
(b) Conductors of electric heating devices are made of an alloy rather than a pure metal due to high resistivity than pure metal and high melting point to avoid getting oxidized at high temperature.
(c) Series arrangement is not used for domestic circuits as current to all appliances remain same in spite of different resistance and every appliance cannot be switched on/ off independently. The voltage too gets divided.Total resistance of domestic circuit will be sum of the resistances of all appliances and hence current drawn by the circuit will be less.
(d) Resistance (R) of a wire is inversely proportional to its cross-section area (A).$(R \propto 1/A)$
(e) Copper and aluminium wires are usually employed for electricity transmission because these are extremely good conductors with low resistivity. Moreover,these are ductile and can be drawn in the form of fine wires.

**Solution**

**Class 10 - Social Science**

**CONFIDENCE EXAMINATION-I 2019-2020**

**Section A**

1. (a) - (ii), (b) - (iv), (c) - (i), (d) - (iii)
2. **(a)** All of these
   **Explanation:** The effects of non-cooperation on the economic front were more dramatic. Foreign goods were boycotted, liquor shops picketed, and foreign cloth burnt in huge bonfires. The import of foreign cloth halved between 1921 and 1922, its value dropping from Rs 102 crore to Rs 57 crore. In many places merchants and traders refused to trade in foreign goods or finance foreign trade
3. **(d)** Amar Jiban
   **Explanation:** Amar Jiban, published in 1876, is the name of Rashundari Devi's autobiography and is the first autobiography written by an Indian woman.
4. The first jute mill was established in1917 in India.
5. **(b)** Renewable and non-renewable
   **Explanation:** On the Basis of Exhaustibility
   **Renewable Resources:** The resources which can be renewed or reproduced by physical, chemical or mechanical processes are known as renewable or replenishable resources. For example, solar and wind energy, water, forests and wildlife, etc. Some renewable resources have essentially an endless supply, such as solar energy, wind energy and geothermal pressure, while other resources are considered renewable even though some time or effort must go into their renewal, such as wood, oxygen, leather and fish. Most precious metals are considered renewable as well; even though they are not naturally replaced, they can be recycled because they are not destroyed during their extraction and use. The renewable resource may further be divided into continuous or flow.
   **Non-Renewable Resources:** A nonrenewable resource is a resource of economic value that cannot be readily replaced by natural means on a level equal to its consumption. It take thousands of years to form naturally and cannot be replaced as fast as they are being consumed. Minerals and fossil fuels are examples of such resources. These resources take millions of years in their formation. Some of the resources like metals are recyclable and some like fossil fuels cannot be recycled and get exhausted with their use.
6. Labour-intensive farming is intensive subsistence farming. It is a kind of agriculture where a lot of capital and labour are used to increase the yield that can be obtained per area.
7. Coal, gypsum, potash salt and sodium salts are the minerals which are formed in beds and layers.
8. Buddhism is the state religion of Sri Lanka.
9. **(c)** Union
   **Explanation:** Union List includes subjects of national importance such as defence of the country, foreign affairs, banking,communications and currency.
10. Feminist movement

    OR

    Caste system
11. Religious differences are beneficial only when equal treatment is given to all religions and people are able to express their interests, needs, and demands without any fear.

    OR

    There are 114 languages spoken in India. Besides Hindi, there are 21 other languages recognised as Scheduled Languages by the Constitution. About 40% of people in India speak Hindi language.
12. Purchasing power is given by currency to a nation. Besides, it facilitates trade and develops a nation’s economy. Thus, currency aids in building the base of a strong nation.
13. **(b)** Average income
    **Explanation:** Per capita income or average income measures the average income earned per person in a

given area (city, region, country, etc.) in a specified year.It is calculated by dividing the area's total income by its total population. Per capita income is often used to measure a country's standard of living.

14. Economic sustainability

15. **(a)** Construction of houses
**Explanation:** The tertiary or service sector is the third of the three economic sectors . It consists of the production of services instead of end products. Construction of houses is an activity of secondary sector and rest are of tertiary sector.

16. Average income

OR

India

17. **(a)** Collateral is an asset that the lender owns and uses this as a guarantee to a lender until the loan is repaid.
**Explanation:** Collateral is an asset that the borrower owns and uses this as a guarantee to a lender until the loan is repaid

18. Natural products are changed into other forms in the secondary sector.

19. **(a)** Assertion is INCORRECT but, reason is CORRECT.
**Explanation:** Assertion is INCORRECT but, reason is CORRECT.

20. **(d)** The main motive of the formal sector is making only profit.
**Explanation:** The main motive of the formal sector is social welfare

**Section B**

21. The effects of worldwide depression on India were as follows:
    i. India’s trade was affected, exports decreased as international prices crashed.
    ii. There was a fall in agricultural prices from 1926 and it collapsed after 1930.
    iii. As the demand for agricultural goods fall and exports declined, peasants found it difficult to sell their harvest and pay the revenue and the British government continued to take high taxes.
    iv. The economic instability and colonial rule provided an opportunity to Mahatma Gandhi to launch the Civil Disobedience Movement in 1930.

OR

    a. Rich peasant communities –like Patidars of Gujarat and the Jatts of Uttar Pradesh- were active in the movement.
    b. Being producers of cash crops, they were very hard hit by the trade depression and falling prices. For them the fight for swaraj was a struggle against high revenues.
    c. As their cash income disappeared, they found it impossible to pay the government’s revenue demand. And the refusal of the government to reduce the revenue demand led to widespread resentment.
    d. Due to this reason rich peasants become enthusiastic supporters of the civil Disobedience Movement.

22. Population growth from the late eighteenth century had increased the demand for food grains in Britain pushing up the prices. Under pressure from farmers, the government restricted the import of corn. These laws were commonly known as the Corn Laws. However, later the industrialists and people living in cities forced the government to abolish the Corn Laws.

OR

The East India Company appointed a paid servant called the Gomastha to supervise weavers, collect supplies and examine the quality of cloths. Gomastha helped the company to establish their monopoly as:
    i. Those weavers who took loans had to the hand over the cloths they produced to the Gomastha. They could not take it to any other trader.
    ii. The new Gomasthas were outsiders. They acted arrogantly, marched in to villages with sepoys and peons, and punished weavers for delays in supply.

23. **Source A:**
The technique of lending libraries was adopted to educate the white-collar workers in Europe during the 19th century.
**Source B:**
In the 1920s in England, popular works were sold in cheap series called Shilling Series.

**Source C: (Any one relevant point)**

i. It provided the government with extensive rights to censor reports and editorials in the vernacular press.
ii. The government kept regular track of the vernacular newspapers published in different provinces.

24. i. Bauxite is the mineral ore from which aluminium is extracted.
ii. Aluminium is gaining importance because of its extreme lightness, good conductivity, and great malleability. It combines the strength of metals such as Iron.
iii. It is mainly found in Amarkantak Plateau, Maikal Hills and the plateau region of Bilaspur-Katni, Koraput district in Odisha has large deposits, Odisha is the largest bauxite producing state. Others are Gujarat, Maharashtra, and Jharkhand.

OR

i. The minerals content of the ore must be in sufficient concentration.
ii. The type of formation or structure in which they are found determines the relative cases with which mineral ores may be mined.
iii. The mineral should be close to the market so that the transportation cost is low.

25. **Four difficulties of the local government in India are:**
i. Most states have not transferred significant powers to the local governments.
ii. There is a shortage of resources.
iii. Elections are not held regularly.
iv. The Gram Sabha are not held regularly.

26. Six 'regional political parties' of the four southern states of India are:
i. **Tamil Nadu -** AIADMK (All India Dravida Munnetra Kazhagam), DMK.
ii. **Andhra Pradesh** - Telugu Desam, Lok Satta.
iii. **Kerala -** Indian Federal Democratic Party.
iv. **Karnataka -** Janata Dal (secular)

27. Credit is a working capital which is required for production. The credit helps the farmers to meet the ongoing expenses of production, complete production on time, and thereby increase his earnings. Credit, therefore, plays a vital and positive role in this situation.
The examples are based on the risks in the situation and whether there is some support in case of loss.
The examples are given below:
i. A manufacturer taking credit for supplying goods in the festival season usually has low risk, as the products are most likely to be sold completely which will raise his income.
ii. A small farmer taking credit for crops has larger risks in case of crop failure. His only support in case of loss is the land, which he has to sell. So, this will make him poor.

Thus, it can be concluded that use of credit depends on the situation.

OR

**Modern currency is accepted as a medium of exchange without any use of its own because of the reasons mentioned below:**
i. Modern currency is authorized by the government of a country.
ii. In India, the Reserve Bank of India issues all currency notes on behalf of the Central Government.
iii. As per the Indian law, no other individual or organization is allowed to issue currency it's illegal for anyone else to issue notes.
iv. The Indian law legalises the use of rupee as a medium of payment that cannot be refused in settling transactions in India.
v. The payment made in rupees cannot be legally refused by anyone in India.

28. In a country like India, creating more employment opportunities can be accomplished by the following means:
i. If more dams are built and canal water is provided to all the small farmers, a lot of employment can be generated in the agriculture sector.
ii. By establishing factories which can promote employment opportunities for peoples.
iii. Providing cheap credit facilities and crop insurance can result in more employment.
iv. More money should be spent on transport and storage because then more people can be employed.
v. The government/banks can provide a loan at cheap rates to improve irrigational facilities.

vi. Technical training, vocational guidance to unemployed youth for self-employment.
vii. By introducing schemes and programmes for rural and unemployed peoples.

**Section C**

29. Italian Unification faced the following obstacles in its way:
    i. Quarrelsome Division: The division of Italy into many states and their mutual quarrels rendered Italy quite weak.
    ii. Foreign Rules: Foreign countries like France and Austria established their control over a large part of Italy. Napoleon, the French emperor, had conquered the whole of Italy. Thus, the foreign rule was a big hurdle in the way of the Italian Unification.
    iii. Congress of Vienna: After the downfall of Napoleon, the Congress of Vienna once again divided Italy into small states and thus played a great havoc with the task of Italian unification.
    iv. The Pope of Rome: The Pope of Rome was keeping Rome and its adjoining territories under his dominance. This way he was also proving a great hurdle in the way of the Italian unification.
    v. Reactionary Rulers: Reactionary rulers in most of the Italian states were also proving a great hurdle in the way of Italian Unification.

OR

Sentiment of Nationalism in the first half of the 19th century:

    i. Towards the end of the 19th century, nationalism became a narrow belief with inadequate ends. Nationalism could not retain its idealistic liberal-democratic sentiment of the first half of the century but became a narrow belief with inadequate ends.
    ii. This period saw nationalist groups becoming increasingly prejudiced of each other. Nationalist groups became increasingly intolerant leading to war,
    iii. Major European powers manipulated the nationalist aspirations to further their own imperialist aims.
    iv. Source of nationalist tension in Europe was the area called Balkans. Balkan states became jealous of each other and entered into a conflict to establish more control and power in the region at the cost of others.
    v. The idea of romantic nationalism in the Balkan together with the disintegration of the Ottoman Empire made this region very explosive.
    vi. The chief European authorities saw this as an opportunity and manipulated the nationalist desires of the subject peoples. ‘
    vii. One by one, European nationalities broke away from its control and declared independence.
    viii. The Balkan people based their aims for independence or political rights on nationality to prove that they were once independent but were subjugated by a foreign power.
    ix. As the different, Slavic nationalities struggled to define their identity and independence, the Balkan area became an area of intense conflict.

30. 1. Mass communication provides entertainment and creates awareness among people about various national programmes and policies.
    2. (Any two relevant points)
    i. India is the largest producer of feature-films in the world. It produces short films, video feature-films and video short films.
    ii. The Central Board of Film Certification is the authority to certify both Indian and foreign films.
    iii. It is one of the mass communications that provides entertainment, education and creates awareness among the people.
    3.
    **Personal communication:** Communication between two or more persons at personal level.
    **Mass communication:** Communication through which one can communicate with several people at the same time.
31. The cotton textile industry (Maharashtra and Gujarat) was concentrated in the cotton-growing belt in the early years because:
    i. Availability of raw cotton: Due to favorable soil type and other climatic conditions, cotton is grown in a vast area in these states. So, raw materials are available in plenty.
    ii. Proximity to the market: They also enjoy good transport facilities that enable their reach to the national and international markets.

iii. Transport: These states are well connected to the rest of the country by rail and road. Also, they have many large ports from where the finished products can be easily exported.
iv. Cheap labour: Although they have locally available cheap labour force, they are supported by migrant labours from the Northern states.
v. Moist climate: For cotton cultivation, a moist climate is a must.

32. The democratically elected government in Sri Lanka after its independence in 1948, adopted a series of majoritarian measures to establish Sinhala supremacy in Sri Lanka. In 1956, an Act was passed to recognise Sinhala as the only official language, thus disregarding Tamil. The government followed preferential policies that favoured Sinhalese for University positions and government jobs. A new Constitution stipulated that the state shall protect and foster Buddhism.
All these measures taken by the government gradually increased the feeling of alienation among the Sri Lankan Tamils. They felt that none of the political parties led by the Buddhist Sinhala leaders were sensitive to their language and culture. They were deprived of political rights, government jobs and other opportunities common to a citizen.
As a result, the Sri Lankan Tamils launched parties and struggles for the recognition of Tamil as official language for regional autonomy and opportunity in education and job. But their demand for autonomy to provinces populated by the Tamils was repeatedly rejected.
This led to a joint demand by different political organisations of Tamils for an independent Tamil Elam (State) in Northern and Eastern parts of Sri Lanka. This distrust between the two communities turned into widespread political strife which led to a Civil War. As a result, thousands of people of both communities were killed.
33. Democracy is not considered simply a rule of the majority due to the following reasons:
i. In an ideal democratic set-up, the majority always needs to work together with the minority, so that governments represent the general view of all the citizens on an equal footing.
ii. Majority and minority opinions are not deemed to be permanent.
iii. The rule by the majority does not necessarily become the rule by the majority community in terms of race, religion, linguistic groups, etc.
iv. Rule by majority means that different persons and groups may and can form a majority. in case of every decision and election.
v. Democracy remains the ideal democracy only when every citizen of a country has a chance of being the majority at some point in time.
vi. If someone is barred from being in majority on the basis of birth, i.e. on the basis of caste and religion then the democratic rules are not applicable for that person or group.

OR

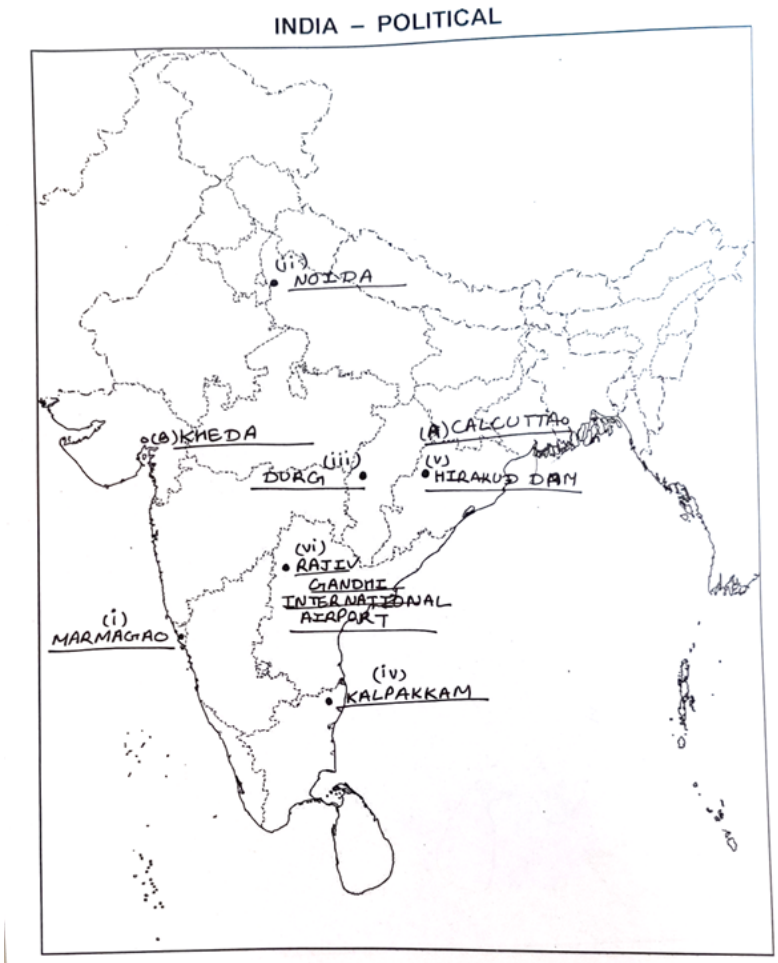
i. Democracies usually develop a procedure to conduct their competitions. This reduces the possibility of some tensions becoming explosive or violent.
ii. A democratic country looks into the needs and aspirations of every section of society. It is also able to handle social conflicts, divisions and differences.
iii. The government of Belgium was able to negotiate differences between two linguist communities after framing policies which accommodated the major ethnic communities in the country.
iv. Accommodating the demands of minority communities reduces the possibility of problems becoming explosive or violent. In a democratic government, the majority should work in close cooperation with the minority.
v. No society can fully or permanently resolve conflicts among different groups. But mechanisms can be evolved to negotiate the differences.
vi. Ability to handle social differences, divisions and conflicts is a definite plus point of a democracy.
vii. The rule of the majority community should not be taken in the religious or linguistic sense alone. Thus, on the basis of social accommodation and respecting each other's cultures and freedom - a major feature of democracy, it is a fair expectation that a democratic country should produce a harmonious social life.

34. MNC is an enterprise operating in several countries but managed from one (home) country. There are a variety of ways in which the MNCs are spreading their production across the globe which are as under:
i. MNCs set up production jointly with the local companies of that area. This benefits the local companies as the MNC may bring with it better technology and provide money for investment.

ii. They set-up units where there is skilled and unskilled labour available at low cost.
iii. Large MNCs in developed countries place orders for productions with small producers.
iv. They have tremendous power to determine price, quality delivery and labour conditions for distant producers.
v. Sometimes, MNCs order the product from local producers. When the product like garments is supplied to the MNC, they sell it under their own brand name.
vi. Most of the times, MNCs buy up the local companies to expand production. For example, Cargill Food, an American MNC had bought Parakh Food.

**Section D**

35.



## Solution

## Class 10 - Hindi A

## CONFIDENCE EXAMINATION-I 2019-2020

### Section A

1. i. मर्यादाओं और मानव मूल्यों को गांधीजी ने अच्छे समाज के निर्माण के लिए महत्वपूर्ण माना क्योंकि साधन की शुद्धता पर ही एक सवस्थ समाज का निर्माण हो सकता है।
   ii. गाँधी जी की मान्यता थी कि इन दोनों में पेशे के लिहाज से कोई फर्क नहीं, दोनों की हैसियत एक ही है क्योंकि कोई भी कार्य छोटा या बड़ा नहीं होता ।
   iii. गाँधी जी बड़े वकीलों को हलुवा बनाने से लेकर सिल पर मसाला पीसना और चक्की चलाकर गेहूँ का आटा पीसने की कला सिखाना चाहते थे ताकि वे गरीब जनता की सेवा करने में हिचकिचाएँ नहीं और श्रम के महत्त्व को एक नई पहचान दिला सकें।
   iv. गाँधीजी अपने इन आध्यात्मिक प्रयोगों के माध्यम से वे देश की गरीब जनता की सेवा करने और उनकी तकदीर बदलने के साथ देश को आजाद कराने के लिए समर्पित व्यक्तियों की एक ऐसी जमात तैयार करना चाह रहे थे जो सत्याग्रह की भट्टी में उसी तरह तपकर निखरे, जिस तरह भट्टी में सोना तपकर निखरता और कीमती बनता है।
   v. गाँधी जी किसी काम को बड़ा अथवा छोटा नहीं मानते थे। वे पसीने की कमाई को सबसे अच्छी कमाई तथा शारीरिक श्रम को अहम मानते थे।
   vi. स्वावलम्बन और स्वरोज़गार

### Section B

2. i. कि कालेज वालों को थर्ड इयर भी खोलना पड़ा। (मिश्र वाक्य - संज्ञा उपवाक्य )
   ii. जब मैं जल्दी से बाहर गया तभी ओले देखने लगा।
   iii. नवाब साहब ने कुछ देर गाड़ी की खिड़की के बाहर देखा और स्थिति पर गौर करते रहे।
   iv. मिश्र वाक्य।
3. i. नवाब साहब द्वारा जेब के चाकू निकाला गया और खीरे छीलने शुरू कर दिए गए।
   ii. आओ, वहां बैठा जाए।
   iii. उनसे आराम करने को कहा गया है।
   iv. उसके द्वारा गिने चुने फ्रेमों को नेताजी की मूर्ति पर फिट कर दिया जाता है।
4. i. **अब-** क्रियाविशेषण, कालवाचक, 'थी' क्रिया की विशेषता।
      काल वाचक क्रिया विशेषण, विशेष्य- 'थी'।
   ii. **दायित्व-** भाववाचक संज्ञा, पुल्लिंग, एकवचन, कर्म कारक।
   iii. **मैं-** पुरुषवाचक सर्वनाम,पुल्लिंग/स्त्रीलिंग, एकवचन, कर्ताकारक।
      पुरुषवाचक सर्ववनाम, उत्तम पुरुष ,एकवचन, पुल्लिंग/ स्त्रीलिंग, कर्ता कारक।
   iv. **गहरा-** गुणवाचक विशेषण, पुल्लिंग, एकवचन, 'संदेह' की विशेषता।
5. i. रौद्र रस
   ii. एक मित्र बोले “लाला तुम किस चक्की का खाते हो? इतने महँगे राशन में भी, तुम तोंद बढ़ाए जाते हो।”
   iii. रति
   iv. वीर रस

### Section C

6. i. हालदार साहब मूर्ति के सामने जाकर अटेंशन की मुद्रा में उसे सम्मान देने के भाव से खड़े हो गए।
   ii. हालदार साहब शहर से गुजरते हुए यह सोच रहे थे कि पानवाले की मृत्यु हो चुकी है और अब मूर्ति पर चश्मा नहीं होगा इसलिए न तो वे चौराहे पर पान खाएँगे, न मूर्ति की ओर देखेंगे, उन्होंने ड्राइवर को भी कहा कि चौराहे पर न रुकना पान कहीं और खा लेंगे।
   iii. हालदार साहब उस कौम के बारे में सोच रहे थे जो देश के लिए अपनी घर-गृहस्थी सबकुछ न्योछावर कर देने वाले लोगों पर हँसती है और अपने फायदे के मौके ढूँढती है ।

7. निम्नलिखित प्रश्नों में से किन्ही चार के उत्तर दीजिये:
   a) हमारी दृष्टि में भगत की कबीर पर अगाध श्रद्धा के निम्नलिखित कारण रहे होंगे -
      i. कबीर गृहस्थ होते भी साधु थे,संभवतया भगत उनके जीवन से प्रभावित हुए होंगे |
      ii. कबीर आडम्बरों को नहीं मानते थे,भगत को उनका यह आदर्श रूप अच्छा लगा होगा |
      iii. कबीर के समान ही भगत भी खरा व्यवहार रखते थे |
      iv. कबीर किसी एक जाति विशेष का भला करना नहीं चाहते थे बल्कि वह तो सम्पूर्ण मानवता का कल्याण चाहते थे | भगत भी व्यक्ति विशेष को नहीं बल्कि मानवता को महत्व देते थे |
   b) हमारे मतानुसार कहानी लिखने के लिए कोई ना कोई घटना विचार और पात्र अवश्य होता है। यह तीनों ही कहानी के अत्यावश्यक तत्व हैं। जब तक कहानीकार के मन में कोई विचार नहीं आए,घटनाएं कहानी को आगे ना बढ़ाए तथा पात्र कथा का माध्यम न बने, तब तक कहानी लिखना संभव नहीं है। यशपाल जी ने लखनवी अंदाज व्यंग्य यह साबित करने के लिए लिखा था कि बिना कथ्य के भी कहानी लिखी जा सकती है। परंतु मेरे हिसाब से विचार,घटना और पात्र कहानी के मुख्य तत्व है, जिनके बिना कहानी लिखना संभव नहीं है।

c) 'मानवीय करुणा की दिव्य चमक'पाठ के आधार पर लेखक के स्मृति पटल पर सन्यासी फादर बुल्के के अनेक चित्र उभर कर सामने आते हैं। जो लेखक के मन मस्तिष्क पर अमिट छाप छोड़ते हैं। फादर का प्रभावशाली व्यक्तित्व- गोरा रंग,नीली आंखें, भूरी दाढ़ी, लंबा कद, सफेद चोगा उन्हें उनकी सादगी की याद दिलाता है । फादर के अंदर मानवीय गुणों का भंडार था। वह प्रेम और करुणा की सजीव मूर्ति थे। सन्यासी होकर भी संबंधों की अंतरंगता को बनाए रखते थे। प्रिय जनों के प्रति प्रेम, स्नेह,अपनत्व की भावना उनके अंदर समाई हुई थी। हिंदी को राष्ट्रभाषा के रूप में देखने की उनकी तीव्र इच्छा थी। उन्होंने प्रयाग विश्वविद्यालय से शोध प्रबंध 'रामकथा:उत्पत्ति और विकास'की रचना की । वे सुख में शुभाशीष तथा दुख में सांत्वना के जादू भरे शब्दों से दूसरों को शांति प्रदान करने का अद्भुत गुण रखते थे। यही बातें लेखक के स्मृति पटल पर बार बार घूमती हैं।

d) भटियारखाना - वह स्थान होता है जहाँ भट्टी जलती रहती है | लेखिका के पिता का मानना था कि वहाँ रहना अपनी योग्यता और क्षमता को नष्ट करना है | उनके अनुसार लड़की को रसोई तक सीमित कर देना उसकी प्रतिभा को कुंठित करना है | इससे लड़की को अपनी प्रतिभा को निखारने का समय नहीं मिलता इसलिए वे लेखिका को रसोई तक सीमित नहीं रखना चाहते थे |

e) बिस्मिल्ला खां अपनी शहनाई कला के प्रति पूर्णतः समर्पित थे | उनमें जैसे खुदा से सच्चे सुर को पाने का जुनून था | अपने पाँचों वक्त की नमाज़ में वह खुदा से यही मांगते थे कि उनके सुरों को खुदा इतना अधिक प्रभावशाली बना दे कि उसे सुनकर लोगों की आँखों से मोती के रूप में आँसू निकल आए | वे अपने सुरों को कभी भी पूर्ण नहीं मानते थे इसलिए उन्हें पूरा करने के लिए वे घंटों अनथक रियाज़ करते रहते थे | संगीत की सम्पूर्णता और एकाधिकार से सीखने की जिजीविषा उनके अन्दर अंत तक थी |

8. i. 'कुम्हड़बतिया' (कोंहरा का बतिया यानी कोंहरा का छोटा रूप ) उँगली दिखाने से सड़ जाता है | यहाँ परशुराम लक्ष्मण को तुक्छ समझ कर बार-बार उँगली दिखा रहे थे इसलिए यहाँ कुम्हड़बतिया का उदाहरण दिया गया है |

ii. लक्ष्मण के हँसने का कारण परशुराम की गर्व भरी बातें एवं खुद को परशुराम द्वारा हलके में लेना है ।

iii. परशुरामजी मुनीसु हैं। उन्होंने शिव-धनुष के टूट जाने पर राम को बुरा-भला कहा और बार-बार धनुष दिखाकर दंड देने की बात कही, फलस्वरूप लक्ष्मण अपना पक्ष रखते हुए उनसे बहस कर रहे हैं।

9. निम्नलिखित प्रश्नों में से किन्ही चार के उत्तर दीजिये:

a) प्रस्तुत पंक्ति में कवि ने बादलों के आकाश में छा जाने वाली स्थिति का वर्णन किया है | बादल किसी भी दिशा से आकर अचानक ही आसमान में छा जाते हैं | इसके द्वारा कवि यह स्पष्ट करना चाह रहा है कि गर्मी से तपती धरती को शीतलता प्रदान करने के लिए बादल अनजानी दिशा से आकर आकाश में छा गए |

b) कवि के अनुसार फसलें पानी, मिट्टी, धूप, हवा और मानव श्रम के मेल से बनी हैं। इनमें विभिन्न नदियों के पानी की ताकत (जादू) समायी हुई है। विभिन्न प्रकार की मिट्टियों की विशिष्ट विशेषताएँ (गुण-धर्म) छिपी हुई हैं। सूरज और हवा का प्रभाव समाया है। इन सबके साथ किसानों और मजदूरों का लगनशील श्रम व सेवा भी सम्मिलित है। इन सभी तत्वों के समेकित योगदान से ही कोई फ़सल तैयार हो पाती है।

c) ' छाया मत छूना' कविता का प्रतिपाद्य यह है कि विगत समय के सुखमय दिनों को याद करने से मनुष्य का दुख और भी गहरा हो जाएगा। इस कविता में कवि ने धन वैभव मान-सम्मान पद प्रतिष्ठा आदि सांसारिक सुखों को मृगतृष्णा बताया है क्योंकि मनुष्य इन सब के पीछे जीवन भर भागता है परंतु वह संतुष्ट नहीं हो पाता। जितना भी इन्हें प्राप्त करने के लिए प्रयासरत रहता है उतना ही वह भ्रमित हो जाता है। इसी कारण साहसी होते हुए भी दुविधा में फँस जाता है, वह निर्णय नहीं ले पाता कि वांछित कार्य को करें या ना करें। वह असमंजस की स्थिति में फंस जाता है और उसका साहस व्यर्थ चला जाता है इसीलिए कवि ने मनुष्य को अतीत के सुखद स्मृतियों को भूलकर वर्तमान के कठोर यथार्थ को स्वीकार कर जीवन पथ पर आगे बढ़ने की सलाह दी है।

d) सामाजिक व्यवस्था के तहत स्त्रियों के प्रति जो आचरण किया जा रहा है | उसके चलते अन्याय न सहन करने के लिए सचेत किया गया है क्योंकि समाज में लड़कियों के साथ में इतना अन्याय होता है कि वह उनको चुपचाप चारदीवारी के अंदर ही सहकर घुट घुट कर अपना जीवन जीती हैं।

e) गोपियाँ कृष्ण के वियोग की पीड़ा में जल रही थीं, फिर भी उन्हें कृष्ण के लौट आने की आशा थी, किन्तु कृष्ण ने स्वयं न आकर उद्धव के हाथों योग संदेश भेजा जिससे उनके वियोग की पीड़ा बढ़ गई। और उन्हें कृष्ण की पुरानी यादें आने लगी जिससे उनकी पीड़ा और बढ़ गई।

10. निम्नलिखित प्रश्नों में से किन्ही दो के उत्तर दीजिये:

a) माता अपने पुत्र को इस भाव से खिलाती थी कि उन्हें लगता था कि मर्द बच्चों को खाना खिलाने का ढंग नहीं जानते। बच्चों का पेट तो माँ के हाथ से खाने पर ही भरता है। भोलानाथ का पेट भरा हुआ होने पर भी वह अलग-अलग पक्षियों के नाम लेकर दही-चावल के बड़े-बड़े कौर उसके मुँह में डालकर उसे यह कहती कि जल्दी से खा लो नहीं तो पक्षी उड़ जाएँगे और बच्चा उनके उड़ने से पहले खा लेता। माँ के अनुसार बच्चा बड़े-बड़े कौर खाकर ही दुनिया में अपना एक निश्चित स्थान बना पाएगा। वे अपने पति से कहती हैं कि आप तो छोटे-छोटे कौर बनाकर बच्चे के मुँह में देते हैं, इससे थोड़ा सा खाकर ही बच्चा सोच लेता है कि उसने बहुत खा लिया और उसका पेट भर गया। माता का मन ममता से परिपूर्ण होता है | इससे हम यह शिक्षा ग्रहण करते हैं कि माँ का मन बड़ा ही कोमल और ममता से भरा हुआ होता है | उसका मन तब तक सन्तुष्ट नहीं होता है जब तक कि वह अपने बच्चे को अपने हाथों से न खिला ले। अतः हमें भी अपनी माँ का उसी प्रकार ध्यान रखना चाहिए जिस प्रकार माँ हमारा ध्यान करती है |

b) जॉर्ज पंचम की लाट की नाक को पुनः लगाने के लिए मूर्तिकार ने निम्नलिखित यत्न किए-

i. मूर्तिकार ने 'जार्ज पंचम की मूर्ति की नाक किस पत्थर के बने थे' के उसे पता लगाने के लिए प्रयास किया।

ii. उसने हिन्दुस्तान के प्रत्येक पहाड़ी प्रदेश और हर एक पहाड़ पर जाकर ऐसा ही पत्थर खोजने का प्रयास किया |

iii. मूर्तिकार भारतीय नेताओं की मूर्तियाँ देखने के लिए देश में चप्पे-चप्पे पर घूमा ताकि फिट होने लायक नाक खोजी जा सके ।

iv. उसने बिहार में सन् बयालीस में शहीद होने वाले बच्चों की मूर्तियों की नाकों को भी देखकर परखने का प्रयास किया कि शायद फिट हो जाए |

v. कहीं भी उपयुक्त नाक नहीं मिल पाई |

vi. अन्त में उसने जिंदा व्यक्ति की नाक काटकर जार्ज पंचम की लाट पर लगा दी।

c) "साना-साना हाथ जोडि" पाठ में जितेन नोर्गे द्वारा लेखिका को सिक्किम की प्रकृति और भौगोलिक स्थिति एवं जन-जीवन के बारे में बताया गया कि-

i. गंगटोक की यात्रा में पूरे रास्ते हिमालय की गहनतम घाटियाँ और फूलों से भरी वादियाँ मिलेंगी। रास्ते में पाईन और धूपी के खूबसूरत पेड़ों के दर्शन होंगे। यहां के अविरल बहते झरने जगह जगह फूलों की चादर से ढकी वादियां,बर्फीली चोटियां आदि का अनुपम प्राकृतिक सौंदर्य लोगों को अपनी ओर आकर्षित करता है

ii. यह घाटी प्रियुता और रूड़ो ड्रेडों के फूलों से सजी हुई है। यहां की श्वेत और रंगीन पताकाएं सभी को विस्मित करती हैं।

iii. “कटाओ' को प्राकृतिक सौन्दर्य से भरपूर होने के कारण हिन्दुस्तान का स्विट्जरलैंड बताया। वहाँ ताजी बर्फ मिलती है। यहां की घाटियों में एक जादुई सम्मोहन है।

iv. जितेन नोर्गे ने गंताम, यूमथांग, कवी लोंग स्टॉक, लायुंग, कटाओ आदि स्थानों के भौगोलिक स्वरूप की जानकारी दी। उसने लेखिका को वेगवती तीस्ता नदी का संगीत व आसमान में उड़ते बादलों की सुंदरता का आभास कराया। गंगटोक का सही नाम गंतोक बताया जिसका अर्थ है–पहाड़। जब यह भारत में विलय हुआ तो आर्मी कप्तान शेखर दत्ता ने इसे टूरिस्ट स्पॉट बनाने का सुझाव दिया।

**जनजीवन-**नोर्गे ने बताया कि यहाँ के लोग बहुत परिश्रमी हैं। यहाँ के बच्चे पढ़ाई के साथ-साथ शाम को अपनी माँ के साथ मवेशी चराने, पानी भरने, लकड़ियों के गट्ठर ढोने का काम भी करते हैं। वहाँ के लोग बौद्ध धर्म में आस्था रखते हैं। जब कोई अप्रिय घटना या मृत्यु हो जाती है तो किसी धार्मिक स्थान पर 108 श्वेत पताकाएँ फहराते हैं तथा किसी शुभ कार्य के अवसर पर 108 रंगीन पताकाएँ फहराते हैं। जितेन ने यह भी बताया कि प्रेयर व्हील घुमाने से सारे पाप धुल जाते हैं।

**Section D**

11. इक्कीसवीं सदी उद्योग-व्यापार की सदी है। आज ग्लोबलाइजेशन के इस युग में "एकला चलो रे" की नीति कारगर नहीं है। हमें पूरी दुनिया के साथ कदम से कदम मिलाकर चलने और दुनिया में अपना वर्चस्व बनाने के लिए उद्योग-व्यापार के क्षेत्र में विकास करना होगा ।

'मेक इन इण्डिया' का शाब्दिक अर्थ है- भारत में निर्मित वस्तु। भारत के वर्तमान प्रधानमंत्री नरेद्र मोदी ने भारत को विश्व पटल पर लाने के लिए इस योजना को क्रियान्वित किया। देश औद्योगिक क्षेत्र में प्रगति करे और हर छोटी -बड़ी वस्तु का उत्पादन भारत में हों। इस पर उन्हें प्रोत्साहित करने का प्रयास किया गया है। 'भारत में निर्मित' अर्थात् मेक इन इण्डिया का ठप्पा जहाँ लगा हो उस पर प्रतिभा, स्किल, योग्यता का प्रयोग करते हुए चीजों का निर्माण किया जाए। केवल धन कमाना ही उद्देश्य नहीं होना चाहिए अपितु उत्पादित वस्तुओं की गुणवत्ता इतनी उच्चकोटि की हो जिससे देश का नाम सर्वत्र रोशन हो जाए।

प्राचीन भारत उद्योग-व्यापार के क्षेत्र में बहुत आगे था। धन-धान्य से सम्पन्न भारत सोने की चिड़िया कहलाता था। तमाम विदेशी आक्रमणकारियों ने भारत की धन सम्पत्ति को जी भर कर लूटा और धीरे-धीरे भारत पराधीनता में जकड़ गया। अंग्रेजी शासन काल में भारत उद्योग-व्यापार के क्षेत्र में इतना पिछड़ गया कि सुई तक का आयात भारत में होने लगा। परिणामतः देश आर्थिक दृष्टि से खोखला होता चला गया।

स्वतंत्रता के उपरान्त देश ने हर क्षेत्र में तरक्की की है। आज भारत के युवा विदेशी संस्थानों में उच्चपदों पर कार्यरत हैं साथ ही देश कम्प्यूटर साफ्टवेयर के क्षेत्र में विश्व के अग्रणी देशों में हैं। भारतीय संस्थाओं ने अन्तरिक्ष अनुसंधान के क्षेत्र में बहुत तरक्की की है। इसरो ने मंगलयान को मंगल की कक्षा में सफलतापूर्वक पहुँचाया हैं तथा हम पी.एस.एल.बी राकेट के द्वारा तमाम देशों के उपग्रहों को अन्तरिक्ष में स्थापित करने में सफल रहे हैं।

हमारे प्रधानमंत्री चाहते हैं कि देश में विदेशी पूँजी का आगमन हो जिसमें 'मेक इन इण्डिया' प्रोग्राम गति पकड़ ले और भारत में निर्मित वस्तुएँ हर क्षेत्र में अपनी गुणवत्ता के लिए जानी जाएँ। युवा प्रतिभाओं को भी अवसर मिलें , कठिन परिश्रम, अनुशासन से यह संभव है। आज हम संभव प्रयास कर प्रधानमंत्री के इस सपने को साकार करने में अपना योगदान दें।

OR

ईश्वर की सर्वश्रेष्ठ रचना है मनुष्य। जिसका जीवन विभिन्न उतार-चढ़ावों को आत्मसात करता हुआ सुख-दुख की सीढ़ियाँ चढ़ते हुये अपने लक्ष्य की प्राप्ति करता है। जीवन के इस लक्ष्य प्राप्ति के मार्ग में उसका संपर्क पारिवारिक सदस्यों, इष्ट-मित्रों ,सगे-संबंधियों से होता है जो प्रत्यक्ष-अप्रत्यक्ष रूप से उसे प्रभावित करते हैं। इन सहयोगियों में हमारे गुरुजनों को भुलाया नहीं जा सकता। गुरूजन एवं आचार्यगण समाज के आदरणीय व्यक्ति माने जाते हैं। प्राचीन काल से ही भारतवर्ष में अध्यापक वर्ग की 'आचार्य देवो भवः' भगवान से तुलना की गई है।

मेरे प्रिय अध्यापक का नाम श्री जयराम है। वे हमें हिन्दी पढ़ाते हैं। हम उन्हें आदर से 'गुरूजी' कहकर पुकारते हैं। जयराम जी अत्यंत नम्र एवं सज्जन व्यक्ति हैं। मेरे अध्यापक ‘सरल जीवन और उच्च विचार' वाले व्यक्ति हैं। मेरे अध्यापक स्नेही और खुले दिमाग वाले व्यक्ति हैं। उन्हें अपने विषय का पूर्ण ज्ञान है। वे हम सबको अच्छी तरह से पढ़ाते हैं। कक्षा से बाहर हम सब के साथ मित्र जैसा व्यवहार करते हैं तथा हमारी समस्याओं का हल निकालते हैं। मेरे अध्यापक सरल एवं सज्जन व्यक्ति हैं।जिसप्रकार वे प्रभावशाली व्यक्तित्व के स्वामी हैं उसी प्रकार अन्तर्मन से भी उदार हैं। कई बार उन्होंने इसके उदाहरण प्रस्तुत किए जैसे उन्होने ने एक ऐसे छात्र की पढ़ाई -लिखाई की ज़िम्मेदारी तब तक निर्वाह करने की ज़िम्मेदारी ली जब तक वह अपने पैरों पर खड़ा न हो जाए क्योंकि उसके माता -पिता की मृत्यु सड़क दुर्घटना में हो गई थी।

मेरे अध्यापक हम सबका उत्साह बढ़ाते हैं। परीक्षा के समय तो वे हमारे लिए हमारे माता -पिता से बढ़कर हमारा ध्यान रखते हैं। श्री जयरामजी हम सबके लिए प्रेरणा के स्रोत हैं। मेरे अध्यापक को बहुत कम गुस्सा आता है। मेरे अध्यापक उद्दंड विद्यार्थियों को मन परिवर्तन करके उन्हें सही मार्ग पर लाने की कला को भली भाँति जानते हैं। मेरे अध्यापक अच्छी नीति पर चलने वाले और समय का पालन करने वाले व्यक्ति हैं। मेरे अध्यापक में निष्कपट, ईमानदारी और कर्तव्यपरायणता का गुण है। श्री जयरामजी हम सबके लिए श्रद्धेय एवं आदरणीय व्यक्ति हैं। वे हम सबको सच्चाई, परिश्रमी और ईमानदार व्यक्ति बने रहने की सलाह देते हैं। श्री जयरामजी हम सब विद्यार्थियों के लिए आदर्श मार्गदर्शक शिक्षक हैं।

विद्यार्थियों का नैतिक उत्थान करने के लिए वे हमें पौराणिक कथाएँ सुनाकर हम सब में अच्छे संस्कार भरते हैं। मेरे अध्यापक आध्यात्मिक व्यक्ति हैं, वे निराकार ईश्वर की प्रार्थना करने का ढंग भी बताते हैं। मेरे अध्यापक स्वयं स्वामी विवेकानन्द से प्रभावित व्यक्ति होने के कारण हम सबका अच्छा मार्ग दर्शन करते हैं। समय-समय वे विवेकानंद के सिद्धांतों एवं विचारों की चर्चा करते हैं । वे हमेशा अच्छा साहित्य पढ़ने पर बल देते हैं ।

आज देश के उज्जवल भविष्य के लिए श्री जयरामजी जैसे शिक्षकों की आवश्यकता है।जो देश के भविष्य को सजाने-सँवारने में अहम भूमिका का निर्वाह करते हैं। मेरे अध्यापक को राष्ट्रीय स्तर पर सर्वश्रेष्ठ शिक्षक' होने का गौरव प्राप्त है। मैं उनके अच्छे स्वास्थ्य एवं दीर्घायु के लिए ईश्वर से प्रार्थना करता हूँ।

OR

**भूमिका:-**

खेल केवल खाली समय का सदुपयोग ही नहीं अपितु जीवन की नियमित आवश्यकता है| जीवन में वही व्यक्ति सुखी है जिसने अपनी दिनचर्या में खेलों को सम्मिलित किया है | नियमित खेलने वाला व्यक्ति बड़ी-बड़ी मुसीबतों में में विचलित नहीं होता और दृढ़ आत्मविश्वासी रहता है | इससे शरीर स्वस्थ और मज़बूत रहता है | स्वस्थ शरीर में स्वस्थ मस्तिष्क निवास करता है। बच्चों में स्वस्थ मन अनुशासित जीवन, स्वस्थ शारीरिक विकास, सदाचार से युक्त उत्तम चरित्र एवं नैतिक मूल्यों का विकास खेल के मैदान में ही किया जा सकता है |

**खेलों की उपयोगिता:-**

खेलों से बच्चे के व्यक्तित्व का विकास भी होता है तथा बच्चे अनुशासन प्रिय भी बनते हैं और उनमें टीम- भावना का भी विकास होता है यही भावना हमें दूसरों के साथ सामंजस्य करना तथा कठिनाइयों एवं विपत्तियों को झेलना सिखाती है इसीलिए स्वामी विवेकानन्द ने अपने देश के नवयुवकों से कहा था-"मेरे नवयुवक मित्रो' ! बलवान बनों। तुमको मेरी यह सलाह है, गीता के अभ्यास की अपेक्षा फुटबॉल खेलने के द्वारा तुम स्वर्ग के अधिक निकट पहुँच जाओगे।' इस कथन से स्पष्ट है कि स्वस्थ शरीर में स्वस्थ मस्तिष्क का निवास सम्भव है और शरीर को स्वस्थ तथा मजबूत बनाने के लिए खेल अनिवार्य है। मनोवैज्ञानिकों का मत है कि मनुष्य को खेलों में रुचि स्वाभाविक हैं। इसी कारण बच्चे खेलों में अधिक रुचि लेते हैं।

**खेल और स्वास्थ्य का संबंध:-**

**पी. साइरन** ने कहा है-"अच्छा स्वास्थ्य एवं अच्छी समझ जीवन के दो सर्वोत्तम वरदान हैं।" इन दोनों की प्राप्ति के लिए जीवन में खिलाड़ी को खिलाड़ी की भावना से खेल खेलना आवश्यक है। खेलने से शरीर को बले, माँसपेशियों को उभार, भूख का तीव्रता, आलस्यहीनता तथा मलादि को शुद्धता प्राप्त होती है। खेल खेलने से मनुष्य में संघर्ष करने की आदत आती है, शरीर स्वस्थ रहता है | जीवन की जय-पराजय को आनन्दपूर्ण ढंग से लेने की महत्वपूर्ण आदत खेल खेलने से ही आती है। इंग्लैण्ड वालों का कथन है-"विद्यार्थी-जीवन में खेल की भावना से प्रशिक्षित होकर ही 'एटन' के मैदान में अंग्रेजों ने नेपोलियन को टरलू' के युद्ध में पराजित किया था। इससे जीवन में खेलों की महत्ता स्पष्ट हो जाती है। खेल हमारा भरपूर मनोरंजन करते हैं। खिलाड़ी हो अथवा खेल-प्रेमी, दोनों को खेल के मैदान में एक अपूर्व आनन्द मिलता है।

**हमारा कर्तव्य:-**

हमारा कर्तव्य है कि हम खेल पर भी ध्यान दें | यदि हम राष्ट्र की उन्नति चाहते हैं तो राष्ट्र के युवकों को स्वस्थ और निरोगी होना चाहिए | यह तभी संभव है जब मनुष्य व्यस्तता में समय निकालकर खेलों के लिए भी नियमित समय दें | खेल हमारे जीवन का अभिन्न अंग है | अतः हमारा कर्तव्य है कि हम स्वयं खेलते हुए, स्वस्थ रहते हुए दूसरों को भी खेलने के लिए प्रेरित करें |

12. दक्षिण पुरी,
नई दिल्ली
२४ मार्च २०१९
प्रिय मित्र राकेश,
सप्रेम नमस्कार
आज यह पत्र मैंने तुम्हें अपने दिल की बात बताने के लिए लिखा है जिसके विषय में मैंने किसी को भी नहीं बताया है। हालांकि तुम्हारा उच्च शिक्षा प्राप्त करने का स्वप्न साकार होने की स्थिति में है।
प्रिय ! मेरे जीवन का एक स्वप्न है जिसे मैं येन-केन प्रकारेण साकार और सार्थक करना चाहता हूँ। मैं देखता हूँ कि संसार में धन कमाने के बहुत से व्यवसाय हैं परन्तु जब मैं डॉक्टरों के शुभ कार्य को देखता हूँ तो मेरी डॉक्टर बनने की आकांक्षा और तीव्र हो जाती है। डॉक्टर जब रोते हुए किसी बीमार को सान्त्वना देकर परामर्श देकर उसके रोग का इलाज कर उसे नवजीवन प्रदान करता है तब उसके चेहरे पर जो सुकून और खुशी दिखाई देती है उसे देख कर तो मेरी इच्छा होती है कि मैं भी डॉक्टर बनूँ।
अतः एम.बी.बी.एस. में प्रवेश पाने के लिए मैं अध्ययनरत हूँ। सफलता मिलने पर सूचित करूँगा।
शुभकामनाओं का अभिलाषी
आपका अभिन्न सुहृद्
महेश

OR

सेवा में,
विकास खंड अधिकारी
नगर निगम
जिला-नजफगढ़
विषय-आधार पहचान पत्र न मिलने की शिकायत
महोदय,
दिनांक 16.01.18 को नजफगढ़ विकास खण्ड के कर्मचारियों ने नागरिकों के 'आधार पहचान पत्र' बनाने के लिए जगह-जगह कैम्प लगाए गए थे। ऐसा ही एक कैम्प राज नगर नजफगढ़ में स्थित मुंशी महाराज इंटर कॉलेज में भी लगा था जहाँ मैंने समस्त औपचारिकताएँ पूरी कर अपना 'आधार पहचान पत्र' तैयार करवाने की समस्त प्रक्रिया पूरी कर दी । मुझसे कहा गया था कि एक माह के भीतर ही आपका 'आधार पहचान पत्र' आपके पते पर डाक से भेज दिया जाएगा किन्तु खेद है कि दो माह बीतने के बाद भी अभी तक मेरा आधार पहचान पत्र नहीं आया है और जब संबन्धित कार्यालय में पूछताछ के लिए गया तब भी कोई संतोषजनक उत्तर नहीं मिला और ही किसी कर्मचारी ने मेरी परेशानी समझने का प्रयत्न किया।
वर्तमान समय में यह पहचान पत्र नागरिकों के लिए अत्यन्त आवश्यक है। यह आई. डी. प्राप्त तो है ही साथ ही बैंक,पोस्ट ऑफिस, रेल,आयकर विभाग आदि में भी मान्य हैं। पासपोर्ट बनाने में भी आधार पहचान-पत्र की उपयोगिता है। मुझे अपने शैक्षिक कार्य के लिए उसकी अत्यंत आवश्यकता है।

अतः आपसे निवेदन है कि मेरा आधार पहचान-पत्र शीघ्र ही प्रदान करने की कृपा करें क्योंकि मेरे कई जरूरी कार्य इससे प्रभावित हो रहे हैं ।
धन्यवाद
भवदीय
विवेक कुमार
शिवपुरी
नजफ़गढ़

13.

**<u>आवश्यकता है</u>**

कपड़े की दुकान पर काम करने वाले कुछ लडकों की|
उम्र 18 से 21 वर्ष तक वेतन योग्यतानुसार। रहने खाने की व्यवस्था दुकान की तरफ से होगी। मेहनती एवं स्वस्थ लड़के ही आवेदन करें ।
पूर्व अनुभवी को प्राथमिकता
पहचान-पत्र के साथ मिलें प्रातःकाल :- 9-10 के बीच।
राजेश चौधरी : -900125XXXX
दुकान संख्या २५,घंटा घर, पाटन (राजस्थान)

OR

**देवभूमि उत्तराखंड में आपका स्वागत है!**


**हरियाली यहाँ अपार है, बर्फ का अंबार है।**
**देवों की महिमा का आधार है, प्रकृति लुटाती जहाँ प्यार है।**
उत्तराखंड राज्य पर्यटन विभाग की ओर से आप सबका हार्दिक स्वागत है।
सेवा का मौका दें और उत्तराखंड की संस्कृति को जानें
टोल फ्री नं.-१८०० १८० ####