ATOMIC ENERGY CENTRAL SCHOOL No. 4, RAWATBHATA
Online Descriptive Test (2020- 21)

Maximum Marks: 40 **CLASS-XII** **TIME- 1.5 HOURS**
SUBJECT-ENGLISH

General Instructions:

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

Section – A . Reading

Q.1. Read the passage given below and answer the questions that follow**.** **(09)**

The facts about Child Care Policy have also shifted dramatically over the past 25 years. The nation now has a family leave law, albeit one that is woefully inadequate by international standards. Expansions of Head Start and the establishment of Early Head Start, alongside the growth of state pre-kindergarten programme are promising developments. Federal and state expenditures on – and funding streams for – child care have also grown substantially, but with minimal restrictions on where dollars are spent. The Federal Government started this trend in 1990 with the passage of the Child Care and Development Block Grant. That programme prioritised access and a market-based (voucher) approach to child care for low-income families, with minimal attention to quality protections or improvements.

Yet the triad of pressing policy issues that we raised in 1990 – quality, affordability and caregiver working conditions – remains in urgent need of attention today. While there has been growing attention to the quality of early-childhood settings in the form of state Early Learning Standards and Quality and Improvement Rating Systems, there is still no assurance that any child in any early care and education setting in the United States will experience safe, developmentally supportive care and education. Wide variation in child care quality remains the norm both across and within different types of settings in different states. Tensions between access and quality are still severe.

Parent fees for child care have doubled since 1997; the share of family income subsumed by child care costs still shows a gaping disparity between non-poor (7.6%) and poor (30.1%) families. Child care workers and teachers continue to earn wages that hover near the poverty line and fall well below those of elementary school teachers, even among comparably degreed teachers. Not surprisingly, child care staff face exceedingly high levels of economic distress and rely heavily on public health, food and income supports.

President Obama has made preschool education and child care quality national policy priorities for first time in more than four decades. The historical separation between child care (for working parents) and early education (for children's development) is gradually eroding, as belied not only by growing reliance on "early care and education" as the term of art for this domain of research and policy, but also by recent policy developments that simultaneously address access and quality and encourage coordination across child care and early-education funding streams.

(A) On the basis of your reading of the above passage, answer the following questions by choosing the correct option.

(1x2)

(i) Growth in expenditure in Child care in the USA started in the year ……. .

(a) 1980
(b) 1990
(c) 1997
(d) Not given in the passage

(ii) Promising developments in the USA in the field of child care includes ……. .

(a) expansion of Head Start programme
(b) establishment of early Head Start programme
(c) growth of state kindergarten programme
(d) all of the above

(B) Answer the following questions briefly. **(1x5)**

i. What have been made national policy priorities after more than 40 years?

ii. What did the Child Care and Development Block Grant Programme do?

iii. Why is there no guarantee that children in early care and education will get a safe and development oriented care ?

iv. What is the difference in child care costs between rich and poor families?

v. What are the promising developments?

C. i. The word ……. is an antonym of 'reducing' (Paragraph -2) **1**

ii.. The word …… is a synonym of 'together'**.** (Paragraph – 4) **1**

SECTION – B **19**

Literature : Text Books

2. Read the extract given below and answer the questions that follow : **1x 4 = 4**

Fishermen in the cold sea
would not harm whales
and the man gathering salt
would look at his hurt hands.

i.What should the fishermen not do?

ii.What does the poet expect of the fishermen and why?

iii.What will the man gathering salt do?

iv.What do the 'hurt hands' imply?

3. Answer any five of the following questions in 30 -40 words each : **3x5 = 15**

(a) What was the chief concern of Sadao's father?

(b) Who was Dr. Sadao Hoki and where did he live?

(c) How did Hana help Dr. Sadao while he operated upon the enemy soldier ?

(d) What makes Jack feel caught in an ugly middle position ?

(e) Why did Jo want the wizard to hit the mother?

(f) How does Jo want the story of Roger Skunk to end?

4. Answer the following question in 120 – 150 words. **6**

Good human values are far above any other value system. How did DR. Sadao succeed as a doctor as well as a patriot ?

OR

What was the General's plan to get rid of the American prisoner? Was it executed ? What traits of the General's character are highlighted in the lesson 'The Enemy'?

5. Answer the following question in 120 – 150 words. **6**

An adult's perspective on life is different from that of a child? Justify this statement with reference to the lesson, 'Should Wizard Hit Mummy' ?

OR

'Story telling is more an art than a science'. Discuss this statement with reference to the chapter, 'Should Wizard Hit Mummy' ?

All The Best

Atomic Energy Central School No 4 Rawatbhata

CLASS 12 - PHYSICS

Online Descriptive Type Test -1(2020-21)

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 35**

1. A parallel plate capacitor of capacitance C is connected to a battery and is charged to a potential difference V. Another capacitor of capacitance 2C is similarly charged to a potential difference 2V. The charging battery is then disconnected and the capacitors are connected in parallel to each other in such a way that the positive terminal of one is connected to the negative terminal of the other. The final energy of the configuration is - **[1]**

   a) $\frac{25}{6}\mathrm{CV}^2$ b) $\frac{3}{2}\mathrm{CV}^2$

   c) $\frac{9}{2}\mathrm{CV}^2$ d) zero

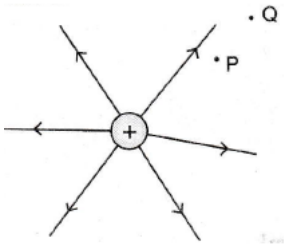
2. Two spherical conductors each of capacity C are charged to potential V and -V. These are then connected by means of a fine wire. The loss of energy is: **[1]**

   a) Zero b) $2\mathrm{CV}^2$

   c) $\frac{1}{2}CV^2$ d) CV^2

3. On which factors does the capacitance of a capacitor depend? **[1]**

4. The figure shows the field lines of a positive charge. Is the work done by the field in moving a small positive charge from Q to P positive or negative? **[1]**



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

   On moving a charge of 20C by 2 cm, 2 J of work is done, then, the potential difference between the points is _____.

6. You are given n resistors, each of resistance R. These are combined first to get the minimum possible resistance, then these are combined to get the maximum possible resistance. The ratio between minimum to maximum resistance is **[1]**

   a) n b) 1/n

   c) $1/n^2$ d) n^2

7. According to Ohm's law, **[1]**

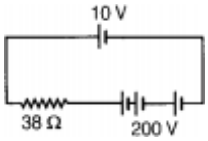
   a) The electric current I flowing through a substance is proportional to the voltage V across its ends

   b) The electric current I flowing through a substance is proportional to the square of voltage V across its ends

c) The electric current I flowing through a substance is inversely proportional to the voltage V across its ends

d) The electric current I flowing through a substance is independent of the voltage V across its ends

8. A 10 V battery of negligible internal resistance is connected across a 200 V battery and a resistance of 38Ω as shown in the figure. Find the value of the current in circuit. **[1]**



9. Suppose balance point is not obtained on the potentiometer wire. Give one possible cause for this. **[1]**

OR

Two similar head lamps are connected in parallel to each other. Together, they consume 48 W from a 6 V battery, the resistance of each filament is:

a) 4Ω b) 6Ω

c) 3Ω d) 1.5Ω

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

_____ is a sensitive device to detect current in a circuit.

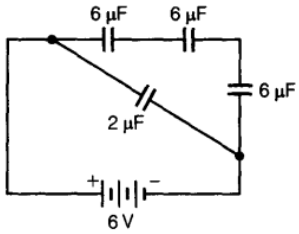
11. Two point charges q_1 and q_2 are located at r_1 and r_2, respectively in an external electric field **[2]** E. Obtain the expression for the total work done in assembling this configuration.

12. i. Can two equipotential surfaces intersect each other? Give reasons. **[2]**

ii. Two charges -q and +q are located at points A (0, 0, -a) and B(0, 0, +a) respectively. How much work is done in moving a test charge from point P(7, 0, 0) to Q(-3, 0, 0)?

OR

Four capacitors of values 6 μF, 6 μF, 6 μF and 2 μF are connected to a 6 V battery as shown in the figure.



Determine the

i. equivalent capacitance of the network.

ii. charge on each capacitor.

13. The resistance of the platinum wire of a platinum resistance thermometer at the ice point is 5 Ω and at the steam point is 5.23 Ω. When the thermometer is inserted in a hot bath, the resistance of the platinum wire is 5.795 Ω. Calculate the temperature of the bath. **[2]**

14. State the underlying principle of a potentiometer. Why is it necessary to **[2]**

a. have uniform area of cross-section of the wire and

b. use a driving cell whose emf is taken to be greater than the emfs of the primary cells?

15. A parallel plate capacitor is charged by a battery. After sometime, the battery is disconnected **[3]**

and a dielectric slab with its thickness equal to the plate separation is inserted between the plates. How will

i. the capacitances of the capacitor,

ii. potential difference between the plates and

iii. the energy stored in the capacitors be affected?

Justify your answer in each case.

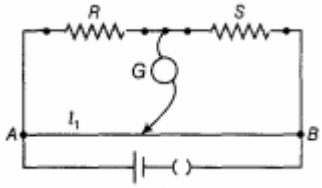
16. Two heating elements of resistances R_1 and R_2 when operated at a constant supply of voltage V, consume powers P_1 and P_2, respectively. Deduce the expressions for the power of their combination when they are in turn, connected in **[3]**

i. series and

ii. parallel across their same voltage supply.

17. i. Write the principle of working of a metre bridge. **[3]**

ii. In a metre bridge, the balance point is found at a distance l_1 with resistance R and S as shown in the figure.

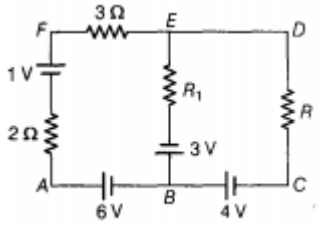


An unknown resistance X is now connected in parallel to the resistance S and the balance point is found at a distance l_2. Obtain a formula for X in terms of l_1, l_2 and S.

18. Define relaxation time of the free electrons drifting in a conductor. How it is related to the drift velocity of free electrons? Use this relation to deduce the expression for the electrical resistivity of the material. **[3]**

OR

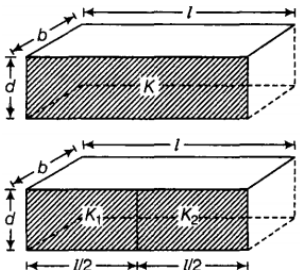
Use Kirchhoff's rules to determine the potential difference between the points A and D. When no current flows in the arm BE of the electric network shown in the figure below:



19. i. Obtain the expression for the potential due to an electric dipole of dipole moment *P* at a point *r* on the axial line. **[5]**

ii. Two identical capacitors of plate dimensions l x b and plate separation *d* have dielectric slabs filled in between the space of the plates as shown in the figure. Find out the relation

between K, K_1 and K_2.



OR

i. Derive the expression for the energy stored in parallel plate capacitor. Hence, obtain the expression for the energy density of the electric field.

ii. A fully charged parallel plate capacitor is connected across an uncharged identical capacitor. Show that the energy stored in the combination is less than the energy stored initially in the single capacitor.

Atomic Energy Central School No 4 Rawatbhata

CLASS 12 - CHEMISTRY

Descriptive Type Test-1 (2020-21)

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 35**

Section A

1. The units for the rate constant for the second order reaction (concentration: mol litre^{-1} time: s) are: **[1]**

   a) s^{-1} b) mol litre^{-1}s^{-1}

   c) mol litre^{-2}s^{-1} d) mol^{-1}litre s^{-1}

2. Half life period of any first order reaction is: **[1]**

   a) half of the rate constant b) same for all reactions

   c) directly proportional to the initial concentration of the reactant d) independent of initial concentration of reactions

3. When 10 g of radioactive isotope is reduced to 1.25 g in 12 years, the half life period of the isotope is **[1]**

   a) 4 years b) 24 years

   c) 16 years d) 8 years

4. Micelles are: **[1]**

   a) Ideal solution b) Associated colloids

   c) Adsorbed solution d) Emulsion cum gel

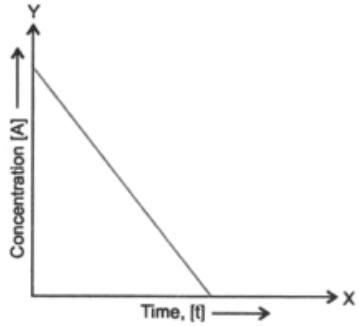
5. Which type of property is the Brownian movement of the colloidal solution? **[1]**

   a) Electrochemical b) Optical

   c) Mechanical d) Electrical

Section B

6. Identify the order of reaction from the following rate constant: **[1]**
   $k = 2.3 \times 10^{-5}\ L\ mol^{-1}\ s^{-1}$
7. If half life period of a first order reaction is X and $\frac{3}{4}th$ life period of the same reaction is Y, how are x and y related each other? **[1]**
8. How will you prove that a chemical reaction is of first order? **[1]**
9. Give two examples of substances which form: **[1]**
   a. Lyphobic sol.
   b. Lyophilic sol.
10. For adsorption of gases on solid surfaces, write Freundlich adsorption isotherm equation. **[1]**
11. Consider the reaction $A \rightarrow P$. The change in concentration of A with time is shown in the plot. **[2]**



i. Predict the order of the reaction.

ii. Derive the expression for the time required for the completion of the reaction.

12. A first order reaction takes 40 min for 30% decomposition. Calculate $t_{1/2}$. **[2]**

13. Give reason: Why finely divided substance is more effective as an adsorbent? **[2]**

14. 'Adsorption is an exothermic process'. Explain. **[2]**

15. Show that in case of first order reaction, the time required for 99.9% of the reaction to complete is 10 times that required for half of the reaction to take place. [log 2 = 0.301] **[3]**

16. What is meant by order and molecularity of a reaction? Distinguish between order and molecularity. **[3]**

17. Write the differences between physisorption and chemisorption with respect to the following aspects: **[3]**

i. Specificity.

ii. Temperature dependence.

iii. Reversibility.

iv. Enthalpy change.

18. Explain what is observed: **[3]**

i. When a beam of light is passed through a colloidal sol

ii. An electrolyte, NaCl is added to hydrated ferric oxide sol

iii. Electric current is passed through a colloidal sol

19. **[5]**

a. At 380° C the half life for the first order decomposition of H_2O_2 is 360 min. The energy of activation is 200 $\boldsymbol{kJ}\ mol^{-1}$. Calculate the time required for 75% decomposition at 450°C.

b. Consider the following data for the reaction.

A + B $\rightarrow$products

Conc. of A (mol L^{-1})	**Conc. of B (mol L^{-1})**	**Initial rate (mol $L^{-1}S^{-1}$)**
0.1	0.1	4.0×10^{-4}
0.2	0.2	1.6×10^{-3}
0.5	0.1	1.0×10^{-2}
0.5	0.5	1.0×10^{-2}

Calculate:

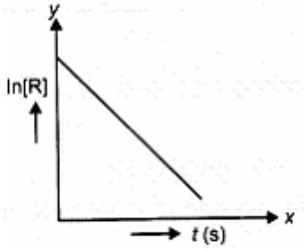
i. Order w.r.t A and B for the reaction

ii. Rate constant

iii. The reaction rate when conc. of A is 0.2 M and B is 0.35 M

OR

For a certain chemical reaction variation in the concentration in [R] Vs time (S) plot is given below:



For this reaction write / draw:

i. What is the order of the reactions?

ii. What are the units of rate constant k?

iii. Give the relationship between K and $t_{1/2}$ (half life period)

iv. What does the slope of above line indicate?

v. Draw the plot log $\frac{[R_0]}{[R]}$ Vs time (S)

Atomic Energy Central School No 4 Rawatbhata

CLASS 12 - MATHEMATICS

Online Descriptive Type Test-1 (2020-21)

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 40**

General Instructions:

Note:

1. All Questions are compulsory.
2. Before uplaoding scanned copy, Write your name , class, section and roll number on the top of first page.
3. Uplaod the solution file within due time. Please note that late submiisions will may not be considered for evaluation purpose.

Section A

1. Let S be the set of all real numbers and let R be a relation on S, defined by a Rb $\Leftrightarrow$ (1 + ab) > 0. Then, R is **[1]**

   a) None of these
   b) Reflexive and transitive but not symmetric
   c) Symmetric and transitive but not reflexive
   d) reflexive and symmetric but not transitive

2. Let R be the relation in the set N given by R = {(a, b) : a = b – 2, b > 6}. **[1]**

   a) (6, 8) $\in$ R
   b) (8, 7) $\in$ R
   c) (2, 4) $\in$ R
   d) (3, 8) $\in$ R

3. The relation R in N $\times$ N such that (a, b) R (c, d) $\Leftrightarrow$ a + d = b + c is **[1]**

   a) reflexive and transitive but not symmetric
   b) an equivalence relation
   c) reflexive but symmetric
   d) none of these

4. Let * be a binary operation on R defined by a * b = ab + 1. Then, * is **[1]**

   a) both commutative and associative
   b) associative but not commutative
   c) neither commutative nor associative
   d) commutative but not associative

5. The value of sin ($\cos^{-1}\frac{3}{5}$) is **[1]**

   a) $\frac{2}{5}$
   b) $\frac{-2}{5}$
   c) $\frac{4}{5}$
   d) None of these

6. The value of $\sin\left(\frac{1}{4}\sin^{-1}\frac{\sqrt{63}}{8}\right)$ is: **[1]**

   a) $\frac{1}{\sqrt{2}}$
   b) $\frac{1}{3\sqrt{3}}$

c) $\frac{1}{2\sqrt{2}}$ d) $\frac{1}{\sqrt{3}}$

7. The principal value of $\cos^{-1}\left(\frac{-1}{2}\right)$ is **[1]**

a) $\frac{4\pi}{3}$ b) $\frac{2\pi}{3}$

c) $\frac{\pi}{3}$ d) $\frac{-\pi}{3}$

8. Let $f(x) = \begin{cases} \frac{x-4}{|x-4|} + a, & x < 4 \\ a + b, & x = 4 \\ \frac{x-4}{|x-4|} + b, & x > 4 \end{cases}$ Then, f(x) is continuous at x = 4 when **[1]**

a) a = -1, b = 1 b) a = 1, b = 1

c) a = 0 , b = 0 d) a = 1, b = -1

9. If $f(x) = \begin{cases} \frac{1-\cos x}{x \sin x} & , x \neq 0 \\ \frac{1}{2} & , x = 0 \end{cases}$,then at x = 0, f(x) is **[1]**

a) differentiable but not continuous b) continuous and differentiable

c) continuous but not differentiable d) neither continuous nor differentiable

10. Which of the following is not an equivalence relation on Z? **[1]**

a) a R b $\Leftrightarrow$ a - b is an even integer b) a R b $\Leftrightarrow$ a + b is an even integer

c) a R b $\Leftrightarrow$ a < b d) a R b $\Leftrightarrow$ a = b

OR

Given an arbitrary equivalence relation R in an arbitrary set X, R divides X into

a) intersecting sets b) two sets

c) mutually disjoint subsets d) three sets

Section B

11. Let R_0 be the set of all nonzero real numbers. Then, show that the function **[2]**
$f : R_0 \to R_0 : f(x) = \frac{1}{x}$ is one-one and onto.

OR

Let A = [–1, 1]. Then, discuss whether the function defined on A by: g(x) = |x|
is one-one, onto or bijective.

12. Evaluate: $\tan\left\{\cos^{-1}\left(-\frac{7}{25}\right)\right\}$ **[2]**

13. Evaluate: $\cot^{-1}\left(\cot\frac{9\pi}{4}\right)$ **[2]**

Section C

14. Show that the relation R defined in the set A of all polygons as R = {(P_1, P_2) : P_1 and P_2 have same number of sides}, is an equivalence relation. What is the set of all elements in A related to the right angle triangle T with sides 3, 4, and 5? **[4]**

15. Prove that: $\tan^{-1}\left(\frac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right) = \frac{\pi}{4} - \frac{1}{2}\cos^{-1}x, \frac{-1}{\sqrt{2}} \leqslant x \leqslant 1$ **[4]**

[4]

16. Show that the function f(x) defined by f(x) = $\begin{cases} \frac{\sin x}{x} + \cos x, & x > 0 \\ 2, & x = 0 \\ \frac{4(1-\sqrt{1-x})}{x}, & x < 0 \end{cases}$ is continuous at x = 0.

OR

Discuss the continuity of the following functions:

a) sin x b) tan x c) sec x d) cosec x

Section D

17. Let A = R - {3}, B = R - {1]. If $f : A \to B$ be defined by $f(x) = \frac{x-2}{x-3}\ \forall x \in A$. Then, show that f is bijective. **[6]**

18. If $\cos^{-1}\frac{x}{a} + \cos^{-1}\frac{y}{b} = \alpha$. Prove that $\frac{x^2}{a^2} + \frac{y^2}{b^2} - 2\frac{xy}{ab}\cos\alpha = \sin^2\alpha$ **[6]**

OR

Prove that: $\tan\left(\frac{\pi}{4} + \frac{1}{2}\cos^{-1}\frac{a}{b}\right) + \tan\left(\frac{\pi}{4} - \frac{1}{2}\cos^{-1}\frac{a}{b}\right) = \frac{2b}{a}$

Atomic Energy Central School No 4 Rawatbhata

CLASS 12 - BIOLOGY

12 - Biology

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 35**

Section A

1. Pedigree analysis is a study of particular traits in: **[1]**

   a) Two species
   b) Two families
   c) Several generations
   d) Two-generation only

2. Failure of cytokinesis after telophase stage of cell division results in the: **[1]**

   a) An increase in whole set of chromosome in organism.
   b) The decrease in the whole set of chromosomes in the organism.
   c) No change in the chromosome number.
   d) Increase or decrease depends upon the type of cell division.

3. Two genes R and Y are located very close on the chromosomal linkage map of the maize plants. When RRYY and rryy genotypes are hybridized, the F2 segregation will show: **[1]**

   a) Segregation in 3:1 ratio
   b) A higher number of parental types
   c) A higher number of the recombinant types
   d) Segregation in the expected 9:3:3:1 ratio

4. Which of the following is a recessive trait of the garden pea plant? **[1]**

   a) Inflated form of ripe pods
   b) Terminal flower position
   c) Purple flower colour
   d) Green pod colour

5. Which organism's male contains a pair of Z chromosome as sex chromosome besides autosomes? **[1]**

   a) Birds
   b) Insects
   c) Lizards
   d) Human beings

6. XO type of sex determination is found in: **[1]**

   a) Elephant
   b) Human beings
   c) Dog
   d) Grasshopper

Section B

7. Write the sex chromosomal complement of the following: **[2]**

	Animal	**Sex Chromosomes**
i	Drosophila ♂	a
ii	Grasshopper ♂	b
iii	Fowl ♀	c

iv	Homo Sapiens ♀	d

8. How is sex determined in human beings? **[2]**
9. Name the type of inheritance in which the phenotypic and genotypic ratio are same. Also give the ratio. **[2]**
10. What is a mutagen? Give one example. **[2]**
11. A man of A blood group marries a woman of AB blood group. Which type of progeny would indicate that man is heterozygous A? **[2]**

Section C

12. Differentiate between multiple allelism and pleiotropy with the help of an example each. **[3]**
13. How does a chromosomal disorder differ from a mendelian disorder? **[3]**
14. List any four symptoms of Down's syndrome. What is the basis of this disorder? **[3]**

Section D

15. a. How would you find out whether a given tall garden pea plant is homozygous or heterozygous? Substantiate your answer with the help of Punnett squares. **[5]**
    b. Given below are the F_2 -phenotypic ratios of two independently carried monohybrid crosses shows which type of dominance pattern:
        i. 1: 2: 1
        ii. 3: 1
16. List the differences between Turner's syndrome and Klenifelter's syndrome **[5]**

Atomic Energy Central School No 4 Rawatbhata

CLASS 12 - हिंदी कोर

Online Descriptive Type Test - 1(2020-21)

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 40**

Section A

1. किसके बहाने – 'कविता एक उड़ान है' ? **[1]**

   a) चिड़िया के बहाने
   b) फूल के बहाने
   c) घर के बहाने
   d) बच्चों के बहाने

2. कविता को बच्चों के समान क्यों माना गया है? **[1]**

   a) भाषा को सीखना बच्चों का खेल है
   b) बच्चे कविता लिखते हैं।
   c) बच्चे और कविता की भावनाएँ निर्विकार और निर्बंध होते हैं।
   d) बच्चे भाषा का प्रयोग जानते हैं

3. कुँवर नारायण के अनुसार कविता का बनना क्या है? **[1]**

   a) हृदय में उत्पन्न भावनाएँ
   b) रस और छंद का योग
   c) शब्द शक्ति का प्रयोग
   d) सही बात का सही शब्द से जुड़ना

4. 'सब घर एक कर देने' का क्या अर्थ है? **[1]**

   a) वसुधैव कुटुम्बकम
   b) बच्चे अपने और पराये में भेद नही करते
   c) खुला अम्बर ही घर है
   d) सारा संसार ही एक परिवार है

5. कविता 'कविता के बहाने' कवि कुँवर नारायण की किस कविता संग्रह से ली गयी है? **[1]**

   a) कोई दूसरा नहीं
   b) इन दिनों
   c) कवितावली
   d) सूरसागर

6. धर्मवीर भारती ने किस पत्रिका का संपादन किया था? **[1]**

   a) पराग
   b) बसुधा
   c) धर्मयुग
   d) कर्मवीर

7. "देख बिना त्याग के दान नहीं होता।" उपर्युक्त कथन किसका है? **[1]**

   a) लेखक
   b) मेंढक मण्डली
   c) जीजी
   d) गाँव वालों का

8. 'काले मेघा पानी दे' रचना में लेखक ने किसका चित्रण किया है? **[1]**

   a) विश्वास और विज्ञान के द्वंद्व
   b) लोक प्रचलित विश्वास
   c) विश्वास के सामर्थ्य
   d) विज्ञान के तर्क

9. धर्मवीर भारती हिंदी साहित्य के कौन-से सप्तक के कवि है? **[1]**

   a) दूसरा सप्तक
   b) चौथा सप्तक
   c) तीसरा सप्तक
   d) तार सप्तक

10. भारती की किस रचना पर हिंदी फिल्म बन चुकी है? **[1]**

a) गुनाहों का देवता
b) ठंडा लोहा
c) सूरज का सातवाँ घोड़ा
d) ठंडा लोहा व गुनाहों का देवता दोनों

Section B

11. **कविता के बहाने** कविता के कवि को क्या आशंका है और क्यों? **[3]**
12. इस कविता के बहाने बताएँ कि **सब घर एक कर देने के माने** क्या है? **[3]**
13. हम आज देश के लिए करते क्या हैं कथन के द्वारा लेखक धर्मवीर भारती देशवासियों को किस बात की याद दिला रहा है? उस बात को हम पूरा क्यों नहीं कर पा रहे हैं? **[2]**
14. धर्मवीर भारती मेंढक मंडली पर पानी डालना क्यों व्यर्थ मानते थे? **[2]**
15. मेंढक-मंडली से लेखक का क्या तात्पर्य है? वह उन पर पानी डालने को क्यों व्यर्थ मानता था? **[2]**
16. **काले मेघा पानी दे** कैसा संस्मरण है? **[2]**

OR

काले मेघा पानी दे पाठ में लेखक को क्यों लगता है कि आज हम देश के लिए कुछ नहीं करते?

Section C

17. **पानी दे, गुड़धानी दे** मेघों से पानी के साथ-साथ गुड़धानी की माँग क्यों की जा रही है? **[4]**

OR

रिश्तों में हमारी भावना-शक्ति का बँट जाना विश्वासों के जंगल में सत्य की राह खोजती हमारी बुद्धि की शक्ति को कमजोर करती है। काले मेघा पानी दे पाठ में जीजी के प्रति लेखक की भावना के संदर्भ में इस कथन के औचित्य की समीक्षा कीजिए।

18. **सिल्वर वैडिंग** कहानी में आधुनिक पारिवारिक मूल्यों के विघटन का यथार्थ चित्रण है। उदाहरण देते हुए इस कथन का विवेचन करें। **[4]**
19. यशोधर बाबू बार-बार किशनदा को क्यों याद करते हैं? इसे आप उनका सामर्थ्य मानते हैं या कमज़ोरी? **[4]**
20. यशोधर बाबू का अपने बच्चों के साथ कैसा व्यवहार था? **सिल्वर वैडिंग** के आधार पर बताइए। **[4]**

Atomic Energy Central School No 4 Rawatbhata

CLASS 12 - PHYSICAL EDUCATION

Descriptive

Time Allowed: 1 hour and 30 minutes **Maximum Marks: 35**

Section A

1. Which of the following is NOT part of balanced diet? **[1]**

   a) Vitamins b) Carbohydrates

   c) Proteins d) Probiotics

2. Maximum Carbohydrates are obtained from **[1]**

   a) Fish b) Whole grain food

   c) Plant oil d) Nuts

3. Body needs vitamins and minerals because **[1]**

   a) They give the body energy b) They help carry out metabolic reactions

   c) They insulate the bodys organs d) They with draw heat from the body

4. A balanced diet is complete, when it will be **[1]**

   a) According to the needs of the person b) 4 to 5 liter watet

   c) Complex Carbohydrates d) Animal fat rich

5. According to Yog sutra, Asana mean **[1]**

   a) Sukhan asanam sthira b) Sitting pose

   c) Asanan sukh Shira d) Sthira Sukham Asanam

6. Obesity can be reduced by the regular practice of certain asanas. Among the most beneficial asana is: **[1]**

   a) Vajrasana b) Pawanmuktasana

   c) Shavasana d) Bhujangasana

7. Choose the odd one. Asana helps to improve : **[1]**

   a) Blood circulation b) Depth of respiration

   c) Digestive system d) Speed

8. Expended form of ODD is **[1]**

   a) Opposite different disorder b) Obessive defect disability

   c) Oppositional defiant disorder d) Opposite different disability

9. The symptoms of _____ are people doing repetitive behaviours, performing routine tasks over and again or having certain thoughts repeatedly. **[1]**

   a) ODD b) ASD

c) ADHD d) OCD

10. Any kind of impairment or permanent reduction in the physical or mental capacity is called _____. **[1]**

a) Disease b) Disorder

c) Discomfort d) Disability

Section B

11. Explain how can you control and maintain Body Weight. **[3]**
12. Differentiate between Food Tolerance and Food Allergy. **[3]**
13. What is Obesity?Write the benefits of Asanas in preventing Obesity. **[3]**
14. What are the symptoms of ADHD in children? **[3]**
15. What are the strategies to make physical activities accessible for children with special needs. **[3]**

Section C

16. "Asanas act as a Preventive measures".explain **[5]**
17. Write the types and Causes of Disability. **[5]**

Solution

Class 12 - Mathematics

Online Descriptive Type Test-1 (2020-21)

Section A

1. **(d)** reflexive and symmetric but not transitive
   Explanation: Let S denote the set of all real numbers. Let R be a relation in S defined as a R b iff 1 + ab > 0.
   i. R is reflexive, Let a be any real number.
   Then 1 + aa = 1 + a^2 > 0, since $a^2 \geq 0$.
   Thus a R a $\forall$ a $\in$ S. Therefore R is reflexive.
   ii. R is symmetric. Let a, b be any two real numbers.
   Then a R b $\Rightarrow$ 1 + ab > 0 $\Rightarrow$ 1 + ba > 0 [$\because$ ab = ba]
   $\therefore$ R is symmetric.
   iii. R is not transitive. Consider three real number 1, -$-\frac{1}{2}$, -4.
   We have
   $1+1\left(-\frac{1}{2}\right)=\frac{1}{2}>0$
   $\therefore 1R-\frac{1}{2}$
   Further $1+\left(-\frac{1}{2}\right)(-4)=3>0$
   $\therefore -\frac{1}{2}R-4$
   But 1 + 1(-4) = -3 Which is not greater than 0. Therefore 1 is not R-related to -4.
   Thus 1 $R-\frac{1}{2}, -\frac{1}{2}R-4$ and 1 is not R-related to -4.
   $\therefore$ R is not transitive.
2. **(a)** (6, 8) $\in$ R
   Explanation: (6, 8) $\in$ R
   as b - 2 = 8 - 2 = 6 and b>6 .
3. **(b)** an equivalence relation
   Explanation: Check: (a, b)R (a, b) as
   a + b = b + a
   hence R is reflexive.
   Now,let
   (a, b) R (c, d) ,then,
   a + d = b + c
   $\Rightarrow$ c + b = d + a
   $\Rightarrow$ (c, d) R (a, b)
   => R is symmetric
   Now,
   (a, b) R (c, d) and (c,d)R(e,f)Then,
   a + d = b + c and
   c + f = d + e
   Adding,we get,
   a + d + c + f = b + c + d + e
   $\Rightarrow$ a + f = b + e
   So (a, b) R (e, f)
   R is transitive.
   Hence R is an equivalence relation.
4. **(d)** commutative but not associative
   Explanation: a * b = ab + 1
   b * a = ba + 1
   $\Rightarrow$ a * b = b * a
   So * is Commutative

Now
(a * b) * c
= (ab + 1) * c
= abc + c + 1
a * (b * c)
= a * (bc + 1)
= abc + a + 1
$\Rightarrow$ (a * b) * c $\neq$ a * (b * c)

5. **(c)** $\frac{4}{5}$

Explanation: Let x = sin cos^{-1} $\frac{3}{5}$
$\Rightarrow \cos x = \frac{3}{5}$
Now, sin x = $\sqrt{1 - \cos^2 x}$
$= \sqrt{1 - \left(\frac{3}{5}\right)^2}$
= $\frac{4}{5}$
$\Rightarrow x = \sin^{-1}\frac{4}{5} = \cos^{-1}\frac{3}{5}$
Therefore
Sin (cos^{-1} $\frac{3}{5}$) = sin (sin^{-1} $\frac{4}{5}$)
Let , y = sin (sin^{-1} $\frac{4}{5}$)
$\Rightarrow$ sin^{-1} y = sin^{-1} $\frac{4}{5}$
$\Rightarrow$ y = $\frac{4}{5}$

6. **(c)** $\frac{1}{2\sqrt{2}}$

Explanation: $\sin\left(\frac{1}{4}\sin^{-1}\frac{\sqrt{63}}{8}\right)$
Let, $\sin^{-1}\frac{\sqrt{63}}{8} = x$
sin x = $\frac{\sqrt{63}}{8}$
cos x = $\sqrt{1 - \sin^2 x}$
cos x = $\sqrt{1 - \frac{63}{64}}$
cos x = $\frac{1}{8}$
Consider,
$\sin\left(\frac{1}{4}\sin^{-1}\frac{\sqrt{63}}{8}\right)$
$= \sin\left(\frac{1}{4}x\right)$
$= \sqrt{\frac{1-\cos\frac{x}{2}}{2}} \quad \left(\because \sin x = \frac{1-\cos 2x}{2}\right)$
$= \sqrt{\frac{1-\sqrt{\frac{1+\cos x}{2}}}{2}} \quad \left(\because \cos x = \frac{1+\cos 2x}{2}\right)$
$= \sqrt{\frac{1-\sqrt{\frac{1+\frac{1}{8}}{2}}}{2}}$
$= \sqrt{\frac{1-\frac{3}{4}}{2}}$
$= \sqrt{\frac{1}{8}}$
$= \frac{1}{2\sqrt{2}}$

7. **(b)** $\frac{2\pi}{3}$

Explanation: Let the principle value be given by x

Now, let x = $\cos^{-1}\left(\frac{-1}{2}\right)$

$\Rightarrow \cos x = \frac{-1}{2}$

$\Rightarrow$ cos x = -cos $\left(\frac{\pi}{3}\right)$ $\left(\because \cos\left(\frac{\pi}{3}\right) = \frac{1}{2}\right)$

$\Rightarrow$ cos x = cos $\left(\pi - \frac{\pi}{3}\right)$ $(\because -\cos(\theta) = \cos(\pi - \theta))$

$\Rightarrow$ x = $\frac{2\pi}{3}$

8. **(d)** a = 1, b = -1

Explanation: $\lim_{x \to 4^-} f(x) = a + b$

$\lim_{x \to 4} \frac{x-4}{|x-4|} + a = a + b$

- 1 + a = a + b

- 1 = b

Also,

$\lim_{x \to 4^+} f(x) + b = a + b$

$\lim_{x \to 4} \frac{x-4}{|x-4|} + b = a + b$

1 + b = a + b

a = 1

9. **(b)** continuous and differentiable

Explanation: Given that $f(x) = \left\{ \begin{array}{c} \frac{1-\cos x}{x \sin x}, x \neq 0 \\ \frac{1}{2}, x = 0 \end{array} \right\}$

Checking continuity and differentiability at x = 0,

LHL: $\lim_{x \to 0^-} \frac{1-\cos x}{x \sin x} = \lim_{x \to 0^-} \frac{1-\cos x}{x \sin x} \times \frac{x}{x} = \lim_{x \to 0^-} \frac{1-\cos x}{x^2} \times \frac{x}{\sin x} = \frac{1}{2}$

LHL: = f(x=0)

Hence, f is continuous at x = 0.

LHD at x =0,

$\lim_{x \to 0^-} \frac{f(x)-f(0)}{x-0} = \lim_{h \to 0} \frac{f(0-h)-f(0)}{0-h-0}$

$= \lim_{h \to 0} \frac{\frac{1-\cos(-h)}{(-h)\sin(-h)} - \left(\frac{1}{2}\right)}{-h} = 0$

RHD at x = 0,

$\lim_{x \to 0^+} \frac{f(x)-f(0)}{x-0} = \lim_{h \to 0} \frac{f(0+h)-f(0)}{0+h-0}$

$= \lim_{h \to 0} \frac{\frac{1-\cos(h)}{(h)\sin(h)} - \left(\frac{1}{2}\right)}{h} = 0$

$\because$ LHD = RHD = f(0)

$\therefore$f(x) is differentiable at x = 0

10. **(a)** a R b $\Leftrightarrow$ a - b is an even integer

Explanation: a R b $\Leftrightarrow$ a – b is a even integer

Given R = {(a, b) : a – b is an even integer(i.e divisible by 2)}

For equivance relation we have to check three parameters:

(i) Reflexive:

If (a-b) is divisible by 2 then,

$\Rightarrow$ (a-a)=0 is also divisible by 2

$\Rightarrow$ (a,a) $\in$ R

Hence R is Reflexive $\forall$ (a, b) $\in$ Z

(ii)Symmetric:

If (a-b) is divisible by 2 then,

$\Rightarrow$ (b - a) =-(a - b) is also divisible by 2

Thus,(a, b) $\in$ R $\Rightarrow$ (b, a) $\in$ R

Hence R is Symmetric $\forall$ (a, b) $\in$ Z

(iii)Transitive:
If (a-b) and (b-c) are divisible by 2 then,
$\Rightarrow$ a-c = (a-b)+(b-c) is also divisible by 2
This,(a,b) $\in$ R, (b,c) $\in$ R $\Rightarrow$ (a, c) $\in$ R
Hence R is Transitive $\forall$ (a, b) $\in$ Z
$\Rightarrow$ As Relation R is satisfying all the three parameters, hence R is an equivalence relation.

OR

(c) mutually disjoint subsets
Explanation: An equivalence relation R gives a partitioning of the set A into mutually disjoint equivalence classes,i.e. union of equivalence classes is the set A itself.

Section B

11. Given:$f : R_0 \to R_0 : f(x) = \frac{1}{x}$
We have,
$f(x) = \frac{1}{x}$
For, f(x_1) = f(x_2)
$\Rightarrow \frac{1}{x_1} = \frac{1}{x_2}$
= x_1 = x_2
When, f(x_1) = f(x_2) then x_1 = x_2
$\therefore$ f(x) is one-one function.
$f(x) = \frac{1}{x}$
Let f(x) = y such that $y \in R_0$
$\Rightarrow y = \frac{1}{x}$
$\Rightarrow x = \frac{1}{y}$
Since $y \in R_0$
$\Rightarrow$ x will also $\in \mathrm{R}_0$, which means that every value of y is associated with some x.
$\therefore$ f(x) is onto function.
Hence Proved.

OR

Given that, A = [–1, 1]
let g(x_1) = g(x_2)
$\Rightarrow$ $|x_1|$ = $|x_2|$
$\Rightarrow$ x_1 = $\pm$ x_2
$\Rightarrow$ x_1= x_2 and x_1= - x_2 ...{e.g., g(-1) = |-1| = 1 and g(1) = |1| = 1}
$\Rightarrow$ g is not one-one.
We observe that (-1) does not have any pre-image in the domain since g(x) = |x| assumes only non-negative values.
i.e. we cannot find any number in domain which will give (-1) in co-domain.
$\Rightarrow$ g is not onto
Hence, g is neither one one nor onto.

12. Let $\cos^{-1}\left(-\frac{7}{25}\right) = x$, where x $\in \left(\frac{\pi}{2}, \pi\right)$
$\Rightarrow \cos x = -\frac{7}{25}$
Now to find: $\tan\left[\cos^{-1}\left(-\frac{7}{25}\right)\right] = \tan x$
As we know that $1 + \tan^2 x = \sec^2 x$
$\Rightarrow \tan x = -\sqrt{\sec^2 x - 1}$ as x $\in \left(\frac{\pi}{2}, \pi\right)$
$\Rightarrow \tan x = -\sqrt{\frac{1}{\cos^2 x} - 1}$
$\Rightarrow \tan x = -\sqrt{\left(-\frac{25}{7}\right)^2 - 1}$
$\Rightarrow \tan x = -\frac{24}{7}$
$\Rightarrow \tan\left[\cos^{-1}\left(-\frac{7}{25}\right)\right] = -\frac{24}{7}$

13. The value of $\cot\frac{9\pi}{4}$ is 1.

∴ The question becomes $\cot^{-1}(1)$.

Suppose,$\cot^{-1}(1)$ = y

$\Rightarrow$ cot y = 1

= $\cot\left(\frac{\pi}{4}\right)$ = 1

The range of principal value of $\cot^{-1}(1)$ is (0, π)

and $\cot\left(\frac{\pi}{4}\right)$ = 1

∴ The value of $\cot^{-1}(\cot\frac{9\pi}{4})$ = $\frac{\pi}{4}$.

Section C

14. **Part I**: R = {(P_1, P_2): P_1 and P_2 have same number of sides}

i. Consider the element (P_1, P_1), it shows P_1 and P_1 have same number of sides. Therefore, R is reflexive.

ii. If (P_1, P_2) $\in$ R then P_1 and P_2 have same no.of pages .Then, P_2 and P_1 have same no. of pages so (P_2, P_1) $\in$ R

∴ R is symmetric.

iii. If (P_1, P_2) $\in$ R and (P_2, P_3) $\in$ R then P_1 and P_2 have same no. of pages and P_2 and P_3 have same no. of pages .This implies P_1 and P_3 have same no. of pages and hence (P_1, P_3) $\in$ R ,therefore, R is transitive.

Therefore, R is an equivalent relation.

Part II: Since the relation considers only the number of sides, therefore, all the triangles are similar to the given triangle.

15. Putting $x = \cos 2\theta$ so that $\theta = \frac{1}{2}\cos^{-1}x$

L.H.S. $= \tan^{-1}\left(\frac{\sqrt{1+x}-\sqrt{1-x}}{\sqrt{1+x}+\sqrt{1-x}}\right)$

$= \tan^{-1}\left(\frac{\sqrt{1+\cos 2\theta}-\sqrt{1-\cos 2\theta}}{\sqrt{1+\cos 2\theta}+\sqrt{1-\cos 2\theta}}\right)$

$= \tan^{-1}\left(\frac{\sqrt{2\cos^2\theta}-\sqrt{2\sin^2\theta}}{\sqrt{2\cos^2\theta}+\sqrt{2\sin^2\theta}}\right)$

$= \tan^{-1}\left(\frac{\sqrt{2}\cos\theta-\sqrt{2}\sin\theta}{\sqrt{2}\cos\theta+\sqrt{2}\sin\theta}\right)$

Dividing every term by $\sqrt{2}\cos\theta$,

$= \tan^{-1}\left(\frac{1-\tan\theta}{1+\tan\theta}\right)$

$= \tan^{-1}\left(\frac{\tan\frac{\pi}{4}-\tan\theta}{1+\tan\frac{\pi}{4}\tan\theta}\right)$

$= \tan^{-1}\tan\left(\frac{\pi}{4}-\theta\right) = \frac{\pi}{4}-\theta$

$= \frac{\pi}{4} - \frac{1}{2}\cos^{-1}x =$ R.H.S.

16. To show that the given function is continuous at x = 0, we show that

$(LHL)_{x=0}$ = $(RHL)_{x=0}$ = f(0) ....(i)

Here, we have f(x) = $\begin{cases} \frac{\sin x}{x}+\cos x, & x>0 \\ 2, & x=0 \\ \frac{4(1-\sqrt{1-x})}{x}, & x<0 \end{cases}$

Now, LHL = $\lim_{x\to 0^-} f(x) = \lim_{x\to 0^-}\frac{4(1-\sqrt{1-x})}{x}$

$= \lim_{h\to 0}\frac{4[1-\sqrt{1-(0-h)}]}{0-h}$

$= \lim_{h\to 0}\frac{4[1-\sqrt{1+h}]}{-h}$

$= \lim_{h\to 0}\frac{4[1-\sqrt{1+h}]}{-h}\times\frac{1+\sqrt{1+h}}{1+\sqrt{1+h}}$

$= \lim_{h\to 0}\frac{4\left[(1)^2-(\sqrt{1+h})^2\right]}{-h[1+\sqrt{1+h}]}$

$= \lim_{h\to 0}\frac{4[1-(1+h)]}{-h[1+\sqrt{1+h}]}$

$= \lim_{h\to 0} \frac{-h\times 4}{-h[1+\sqrt{1+h}]}$

$= \lim_{h\to 0} \frac{4}{1+\sqrt{1+h}}$

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

and RHL = $\lim_{x\to 0^+} f(x) = \lim_{x\to 0^+} \left(\frac{\sin x}{x} + \cos x\right)$

$\Rightarrow \quad \text{RHL} = \lim_{h\to 0} \left(\frac{\sin h}{h} + \cos h\right)$

$= \lim_{h\to 0} \frac{\sin h}{h} + \lim_{h\to 0} \cos h$

= 1 + cos 0

= 1 + 1

= 2

Also , given that x = 0, f(x) = 2 $\Rightarrow$f(0) = 2

Since, $(LHL)_{x = 0}$ = $(RHL)_{x = 0}$ = f(0) = 2

Therefore, f(x) is continuous at x = 0.

OR

a) sin x is continuous in R

b) tan x is continuous at all real numbers except at odd integral multiples of pi/2

c) sec x is continuous at all real numbers except at odd integral multiples of pi/2

d) cosec x is continuous at all real numbers except at integral mulitiples of pi

Section D

17. Given that, A = R - {3}, B = R - {1}.

$f : A \to B$ is defined by $f(x) = \frac{x-2}{x-3}\ \forall x \in A$

For injectivity

Let $f(x_1) = f(x_2) \Rightarrow \frac{x_1-2}{x_1-3} = \frac{x_2-2}{x_2-3}$

$\Rightarrow (x_1 - 2)(x_2 - 3) = (x_2 - 2)(x_1 - 3)$

$\Rightarrow x_1x_2 - 3x_1 - 2x_2 + 6 = x_1x_2 - 3x_2 - 2x_1 + 6$

$\Rightarrow -3x_1 - 2x_2 = -3x_2 - 2x_1$

$\Rightarrow -x_1 = -x_2 \Rightarrow x_1 = x_2$

So, f(x) is an injective function

For surjectivity

Let $y = \frac{x-2}{x-3} \Rightarrow$ x - 2 = xy - 3y

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

$\Rightarrow x = \frac{3y-2}{y-1} \in A,\ \forall y \in B$ [codomain]

So, f(x) is surjective function.

Hence, f(x) is a bijective function.

18. $\cos^{-1}\frac{x}{a} + \cos^{-1}\frac{y}{b} = \alpha \left[\because \cos^{-1}x + \cos^{-1}y = \cos^{-1}\left(xy - \sqrt{1-x^2}\sqrt{1-y^2}\right)\right]$

$\cos^{-1}\left[\frac{x}{a}\cdot\frac{y}{b} - \sqrt{1-\frac{x^2}{a^2}}\cdot\sqrt{1-\frac{y^2}{b^2}}\right] = \alpha$

$\frac{xy}{ab} - \sqrt{1-\frac{x^2}{a^2}}\cdot\sqrt{1-\frac{y^2}{b^2}} = \cos\alpha$

$\frac{xy}{ab} - \cos\alpha = \sqrt{1-\frac{x^2}{a^2}}\sqrt{1-\frac{y^2}{b^2}}$

Squaring both sides,

$\left(\frac{xy}{ab} - \cos\alpha\right)^2 = \left(\sqrt{1-\frac{x^2}{a^2}}\sqrt{1-\frac{y^2}{b^2}}\right)^2$

$\frac{x^2y^2}{a^2b^2} + \cos^2\alpha - 2\cdot\frac{xy}{ab}\cdot\cos\alpha = \left(1-\frac{x^2}{a^2}\right)\left(1-\frac{y^2}{b^2}\right)$

$\frac{x^2y^2}{a^2b^2} + \cos^2\alpha - 2\frac{xy}{ab}\cos\alpha = 1 - \frac{y^2}{b^2} - \frac{x^2}{a^2} + \frac{x^2y^2}{a^2b^2}$

$\frac{x^2}{a^2}+\frac{y^2}{b^2}-2\frac{xy}{ab}\cos\alpha=1-\cos^2\alpha$

$\frac{x^2}{a^2}+\frac{y^2}{b^2}-2\frac{xy}{ab}\cos\alpha=\sin^2\alpha$

OR

Let $\frac{1}{2}\cos^{-1}\frac{a}{b}=\theta$

LHS = $\tan\left(\frac{\pi}{4}+\theta\right)+\tan\left(\frac{\pi}{4}-\theta\right)$

$=\frac{1+\tan\theta}{1-\tan\theta}+\frac{1-\tan\theta}{1+\tan\theta}$

$=\frac{(1+\tan\theta)^2+(1-\tan\theta)^2}{1-\tan^2\theta}$

$=\frac{2+2\tan^2\theta}{1-\tan^2\theta}$

$=2\left(\frac{1+\tan^2\theta}{1-\tan^2\theta}\right)$

$=\frac{2}{\cos 2\theta}\left[\begin{matrix}\because \cos^{-1}\frac{a}{b}=2\theta\\ \cos 2\theta=\frac{a}{b}\end{matrix}\right]$

$=\frac{2}{\frac{a}{b}}$

$=\frac{2b}{a}$

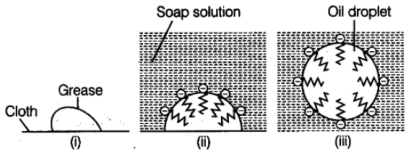
Solution

Class 12 - Chemistry

Descriptive Type Test-1 (2020-21)

Section A

1. **(d)** $mol^{-1}litre\ s^{-1}$
   Explanation: unit of rate constant for nth order of reaction are:
   unit of k for nth order = $(molL^{-1})^{1-n}\ s^{-1}$
   put n=2 for second order reaction.
2. **(d)** independent of initial concentration of reactions
   Explanation: independent of initial concentration of reactions.
   $t_{1_{/2}} = \frac{0.693}{k}$
3. **(a)** 4 years
   Explanation: Radioactivity follow 1st order kinetics.
   $k = \frac{2.303}{t}\log\frac{a}{a-x}$
   $k = \frac{2.303}{12}\log\frac{10}{1.25}$
   k = 0.1919 log 8
   k = $0.1919 \times \log 2^3$
   k = $0.1919 \times 3 \times \log 2 = 0.575 \times 0.3010 = 0.173 yr^{-1}$
   now,
   $t_{1_{/2}} = \frac{0.693}{0.173} = 4.005yrs \simeq 4yrs$
4. **(b)** Associated colloids
   Explanation: Micelles are chemical structures formed with both hydrophilic (they'll mix into water) and hydrophobic (they don't mix into water). Also called as Associated colloids. In the general case, micelles are formed when there is an ideal temperature in the medium (called the Kraft temperature) and a certain concentration of electrolytes (called the CMC: Critical Micelle Concentration) in the medium.



   i. Grease or oil on surface of cloth.
   ii. Stearate ions arranged around the grease or oil droplet.
   iii. Grease or oil droplet surrounded by stearate ions (ionic micelle formed).
5. **(c)** Mechanical
   Explanation: Movement is always a mechanical property.

Section B

6. Second order, because unit is $L\ mol^{-1}\ s^{-1}$.
7. Y = 2X.
8. For a first order reaction, the equation is : $k = \frac{2.303}{t}\log\frac{[R]_o}{[R]}$
   A constant value of k justify's the first order of the reaction.
9. a. Lyophobic sol : Gold, platinum.
   b. Lyophilic sol : gum, gelatin, starch, proteins with suitable dispersion medium.
10. Freundlich adsorption isotherm equation can be written as below:
    $\frac{x}{m} = kP^{\frac{1}{n}}$ or $\log\left[\frac{x}{m}\right] = \log k + \frac{1}{n}\log P$
11. i. If order = Zero
    $Rate = -\frac{d[A]}{dt} = k[A]^0 = k$
    integrating both sides, we get
    [A] = -kt + I ...(i)

where, I is a constant of integration

At t = 0, [A] = $[A]_0$

$\therefore\ [A]_0 = I$

Substituting this value of 1 in eq. (i)

[A] = -kt + $[A]_0$

$k = \frac{1}{t}[A]_0 - [A]$

ii. When the reaction is complete

[A] = 0

$\therefore k = \frac{1}{t}[A]_0$ or $t = \frac{[A]_0}{k}$

12. For a first order reaction,

$t_1 = \frac{2.303}{k}\log\frac{[R]_0}{[R]}$

$k = \frac{2.303}{40\ \text{min}}\log\frac{100}{100-30} = \frac{2.303}{40\ \text{min}}\log\frac{10}{7} = 8.918 \times 10^{-3}\text{min}^{-1}$

Therefore, $t_{1/2}$of the decomposition reaction is

$t_{1/2} = \frac{0.693}{k} = \frac{0.693}{8.918\times10^{-3}}\ \text{min}$

= 77.7 min (approximately)

13. The extent of adsorption increases with increase of surface area of the adsorbent. Finely divided and porous substance having large surface areas are good adsorbents.
14. During adsorption, there is always a decrease in residual forces of the surface. Therefore, the surface energy decreases which appears as heat. Therefore, adsorption is exothermic process.
15. $t99.9\% = \frac{2.303}{K}\log\frac{[R]_0}{\left([R]_0 - \frac{99.9}{100}[R]_0\right)}$

$\frac{2.303}{K}\log 1000$

$= \frac{6.909}{K}$

$t_{1/2} = \frac{0.693}{K}$

$\frac{t99.9\%}{t_{1/2}} = \frac{6.909}{K} \times \frac{K}{0.693} = 10$

16. **Order**

i. It is sum of powers to which concentration terms are raised in rate law or rate equation.

ii. It is determined experimentally.

iii. It can be zero or even in fraction

iv. The order of complex reaction can be determined and slowest step is rate determining step.

Molecularity

i. It is the number of molecules taking part in the reaction.

ii. It is determined theoretically

iii. It is always in whole number

iv. Molecularity of each step is determined separately.

17.

	Physisorption	**Chemisorption**
(i) Specificity	It is not very specific.	It is highly specific in nature.
(ii) Temperature dependence	It usually takes place at low temperature and decreases with increasing temperature.	It takes place at high temperature.
(iii) Reversibility	It is reversible.	It is irreversible.
(iv) Enthalpy change	Low enthalpy of adsorption (20-40 kJ mol^{-1}).	High enthalpy of adsorption (80-240 kJ mol^{-1}).

18. i. When a beam of light is passed through a colloidal solution, then scattering of light is observed. This is known as the Tyndall effect. This scattering of light illuminates the path of the beam in the colloidal solution.

ii. When NaCl is added to ferric oxide sol, it dissociates to give Na^+ and Cl^- ions. Particles of ferric oxide sol are positively charged. Thus, they get coagulated in the presence of negatively charged Cl^- ions.

iii. The colloidal particles are charged and carry either a positive or negative charge. The dispersion medium carries an equal and opposite charge. This makes the whole system neutral. Under the influence of an electric current, the colloidal particles move towards the oppositely charged electrode. When they come in contact with the electrode, they lose their charge and coagulate.

19. a. Let $t_{\frac{1}{2}}$ = half life = 360 min, k_1 = rate constant

$k_1 = \frac{0.693}{t_{\frac{1}{2}}} = \frac{0.693}{360\,\text{min}}$

$= 1.92 \times 10^{-3}\text{min}^{-1}$

$\log \frac{k_2}{k_1} = \frac{E_a}{2.303R}\left[\frac{T_2 - T_1}{T_1 T_2}\right]$

where k_2 = rate constant at temperature T_2(450^{0}C = 450+273 K = 723 K), k_1 = rate constant at temperature T_1(380^{0}C = 380+273 K = 653 K), E_a = Activation energy = 200 kJ/mol, R = 8.314 J/molK

$\log \frac{k_2}{k_1} = \frac{200000}{19.147} \times \frac{723-653}{723\times653}$

= 1.5487

$\frac{k_2}{k_1}$ = antilog 1.5487 = 35.38

$k_2 = k_1 \times 35.38$

$= 1.92 \times 10^{-3} \times 35.38$

$= 6.792 \times 10^{-2}\text{min}^{-1}$

$t = \frac{2.303}{k_2}\log\frac{[R_0]}{[R]} = \frac{2.303}{k_2}\log\frac{[R_0]}{\frac{25}{100}[R_0]}$

where $[R_0]$=Initial reactant concentration, [R]=reactant concentration at time t after 75% decomposition

t = 20.415 min

b. Let us consider the following rate equation

Rate = $[A]^x[B]^y$ where [A] and [B] are reactant concentrations, x and y are orders of reaction w.r.t. A and B respectively

From experiment 3

$1 \times 10^{-2} = k(0.5)^x(0.1)^y \ldots (i)$

From experiment 4

$1.0 \times 10^{-2} = k(0.5)^x(0.5)^y \ldots (ii)$

Dividing (i) by (ii) we get

$\frac{1\times10^{-2}}{1\times10^{-2}} - \frac{1}{5^y} \Rightarrow 5^y = 5^0$

y = 0

From experiment 1

$4.0 \times 10^{-4} = k(0.1)^K(0.1)^y \ldots (iii)$

From experiment 3

$1.0 \times 10^{-2} = k(0.5)^K(0.1)^y \ldots (iv)$

Dividing (iii) by (iv)

$\frac{1}{25} = \frac{1}{5^x}$

$\Rightarrow 5^x = 5^2$

x = 2

Order w.r.t A is 2 and B is 0

rate $= k[A]^2[B]^0$ where k = rate constant

$4.0 \times 10^{-4} = k(0.1)^2$ (from experiment 1)

$k = 4.0 \times 10^{-2} L\,mol^{-1}s^{-1}$

iii. When [A]=0.2 M, [B]=0.35 M

Rate $= k(0.2)^2(0.35)^0$

$= 4.0 \times 10^{-2} \times (0.2)^2$

$= 1.6 \times 10^{-3} mol\,L^{-1}s^{-1}$

OR

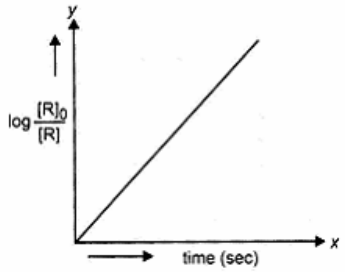
i. First order because the formula for first order is ln[R] = -kt + ln[R_0] ; y = mx + c slope = -k

ii. time^{-1}(s^{-1})

iii. $k = \frac{0.693}{t_{1/2}}$

iv. Rate constant k of reactions

v.



Solution

Class 12 - Biology

12 - Biology

Section A

1. **(c)** Several generations
   Explanation: Pedigree analysis is the study of particular traits in several generations of a family. In this analysis, the inheritance of a particular trait is represented in a family tree over the generation.
2. **(a)** An increase in whole set of chromosome in organism.
   Explanation: Cytokinesis is the division of the chromosome. Failure of cytokinesis after telophase stage of cell division results in the increase in the whole set of chromosomes in an organism that leads to polyploidy.
3. **(d)** Segregation in the expected 9:3:3:1 ratio
   Explanation: Two genes located very close on the chromosomal linkage map. Segregation of R and Y will not take place due to linkage and passes to the same gamete together but overall segregation can be expected as usual as dihybrid cross, 9:3:3:1.
4. **(b)** Terminal flower position
   Explanation:

Trait	Dominant Expression	Recessive Expression
Form of ripe seed (R)	Smooth	Wrinkled
Color of seed albumen (Y)	Yellow	Green
Color of flower (P)	Purple	White
Form of ripe pods (I)	Inflated	Constricted
Color of unripe pods (G)	Green	Yellow
Position of flowers (A)	**Axial**	**Terminal**
Length of the stem (T)	Tall	Dwarf

5. **(a)** Birds
   Explanation: In birds, male contain a pair of Z chromosomes as sex chromosomes besides autosomes while females contain one Z and one W chromosome.
6. **(d)** Grasshopper
   Explanation: In grasshopper, sex determination is of XO type, in which the males have only one X-chromosome besides the autosomes whereas females have a pair of X-chromosome.

Section B

7. (i) XY (ii) XO (iii) ZW (iv) XX
8. A baby's genetic sex is determined at the time of conception. When the baby is conceived, a chromosome from the sperm cell, either X or Y, fuses with the X chromosome in the egg cell, determining whether the baby will be genetically female (XX) or male (XY).
9. **Incomplete dominance** is a form of intermediate inheritance in which one allele for a specific trait is not completely expressed over its paired allele.
   A cross of two F1 hybrids, heterozygous for a single trait that displays incomplete dominance is predicted to give a **1:2:1** ratio among both the genotypes and phenotypes of the offspring
10. A mutagen is a physical or chemical agent that changes the genetic material, usually DNA, of an organism and thus increases the frequency of mutations above the natural background level. Example: X-rays.
11. A man of A-blood group marries a woman of AB blood group then the progeny of B Blood group can indicate the man is heterozygous.
    If the male parent is homozygous for A Blood group, then only possibility of progeny will be showing either A blood group or AB blood group. If the the male parent is heterozygous for A blood group then the possibility of progeny will be showing A blood group,AB blood group or B blood group.

Thus, the distiction would be made only on the basis of progeny showing B Blood group

Section C

12. Multiple allelism is the phenomenon of presence of more than two alternate forms/alleles of a gene present on the same locus on the homologous chromosomes. However, an individual carries only two alleles out of many alleles e.g., in human being the blood groups A, B, O are determined by three alleles- I^A, I^B, I^O or i. Pleiotropy is the ability of a gene to have multiple phenotypic effects because it influences a number of characters simultaneously e.g., sickle-cell anaemia (Hbs). The replacement of glutamic acid by valine in a beta-globin chain of haemoglobin is a major effect while the RBCs become sickle-shaped elongated cells under low oxygen tension is the secondary effect; in Pea, a single gene B, product; may produce more than one effect-shape of seed and size of starch grains.

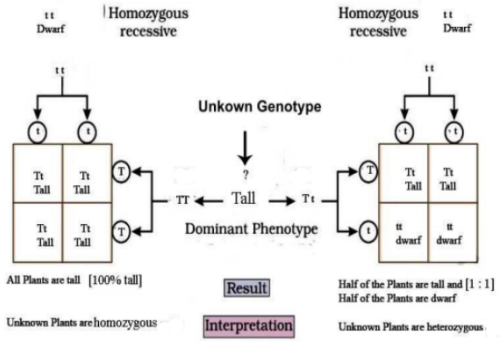
13.

Mendelian disorder	**Chromosomal disorder**
This disorder is mainly due to alteration or mutation in a single gene.	This disorder is caused due to absence or excess or abnormal arrangement of one or more chromosomes.
This follows Mendel's principles of inheritance.	This does not follow Mendel's principles of inheritance.
This may be recessive or dominant in nature.	This always dominant in nature.
For example, hemophilia, sickle-cell anaemia.	For example, Turner's syndrome.

14. Four symptoms of Down's syndrome are:
(a) feeble minded
(b) retarded growth
(c) rounded face and broad forehead
(d) permanently open mouth.
It is an autosomal aneuploidy or 21 trisomy. In this case the egg possesses 24 chromosome instead of 23 and the offspring has 47 chromosomes. (45 + XY in male, 445 + XX in female) instead of 46.

Section D

15. a. By **test Cross**, it can be figured out whether a given tall garden pea plant is homozygous or heterozygous. In a typical test cross, an organism showing a dominant phenotype (and whose genotype is to be determined) is crossed with the recessive parent. The progenies of such a cross can easily be analyzed to predict the genotype of the test organism. Following punnet squares show the results of a typical test cross where the tall plant (T) is dominant over dwarf (t).



b. i) Incomplete dominance
ii) Dominance

16.

Klinefelter syndrome	**Turner syndrome**
It is due to trisomy (2n+1) of sex chromosome.	It is due to monosomy (2n-1).
Genetic Sex: XXY; generally female because of the presence of two X chromosomes.	XO; genetically sexless.
The individual has 47	The individual has 45 chromosomes. (44+X).

Chromosomes(44+XXY).	
Gonadal sex: Testes present, but atrophied, gonadally male, presence of testis is due to Y chromosome.	No ovary; no testes; no gonadal sex.
Phenotype male, outward appearance male; penis, vas deferens, seminal vesicles present, but small sized, no spermatogenesis; sterility present.	Phenotype female, outward appearance; female; vulva, vagina and uterus present, but breasts do not develop owing to the absence of estrogens; no menstruation; sterility present.
Clinical symptoms: Male with slowly degenerating testes, enlarged breasts.	Short stature, webbed neck, female with poorly developed breasts and degenerated ovaries and rudimentary sexual characteristics.

Solution

Class 12 - हिंदी कोर

Online Descriptive Type Test - 1(2020-21)

Section A

1. **(a)** चिड़िया के बहाने
   Explanation: -
2. **(c)** बच्चे और कविता की भावनाएँ निर्विकार और निर्बंध होते हैं।
   Explanation: कविता और बच्चे बँधन हीन होते हैं। वे भावनाओं में बहते चले जाते हैं।
3. **(d)** सही बात का सही शब्द से जुड़ना
   Explanation: कुँवर नारायण के अनुसार कविता का बनना सही बात का सही शब्द से जुड़ना है। यही कवि की मान्यता है।
4. **(b)** बच्चे अपने और पराये में भेद नही करते
   Explanation: बच्चे निष्पाप होते हैं। वे बिना भेद के हर घर को अपना मानते हैं।
5. **(b)** इन दिनों
   Explanation: कविता 'कविता के बहाने' कवि कुँवर नारायण की "इन दिनों" कविता संग्रह से ली गयी है।
6. **(c)** धर्मयुग
   Explanation: धर्मवीर भारती ने धर्मयुग पत्रिका का संपादन किया था।
7. **(c)** जीजी
   Explanation: धर्मवीर भारती के द्वारा रचित काले मेघा पानी दे में उपर्युक्त कथन जीजी का है।
8. **(a)** विश्वास और विज्ञान के द्वंद्व
   Explanation: काले मेघा पानी दे रचना में धर्मवीर भारती ने विश्वास और विज्ञान के बीच चित्रण किया गया है।
9. **(a)** दूसरा सप्तक
   Explanation: धर्मवीर भारती अज्ञेय द्वारा संपादित दूसरे सप्तक के कवि थे।
10. **(d)** ठंडा लोहा व गुनाहों का देवता दोनों
    Explanation: धर्मवीर भारती के ठंडा लोहा और गुनाहों का देवता दोनों पर फिल्म बन चुकी है।

Section B

11. कवि को कविता के अस्तित्व या भविष्य के बारे में संदेह है। उसे आशंका है कि औद्योगीकरण के कारण मनुष्य यांत्रिक होता जा रहा है। उसके पास भावनाएँ व्यक्त करने या सुनने का समय नहीं है। प्रगति की अंधी दौड़ से मानव की कोमल भावनाएं समाप्त होती जा रही हैं। वह मशीन बनता जा रहा है, कविता का भाव समझने का वक्त ही उसके पास नहीं है, मनुष्य ने स्वयं को सीमित कर लिया है जबकि कविता के लिए मुखर होने की आवश्यकता होती है अतः कवि को कविता का अस्तित्व खतरे में दिखाई दे रहा है।
12. बच्चे खेल-खेल में अपनी सीमा, अपने-परायों का भेद भूल जाते हैं। वे एक जगह से दूसरी जगह बिना विचारे दौड़ते रहते है, उन्हें किसी के रोक-टोक की चिन्ता नही रहती है, एक जगह से दूसरी जगह दौड़ते हुये सभी में अपनत्व का भाव उत्पन्न करते हैं उसी प्रकार कविता भी शब्दों का खेल है, इसका क्षेत्र व्यापक होता है। कवि को किसी का भय नहीं रहता। उसकी कलम को किसी बंधन में बाँधा नहीं जा सकता, वह शब्दों ,भावों, विचारों के नए-नए खेल बनाता है। वह अपनी कलम से जन अभिव्यक्ति का माध्यम बन जाता है। अतः उसे कविता करते वक्त अपने-पराये या वर्ग विशेष का भेद अथवा बंधन भूलकर लोक हित में कविता लिखनी चाहिए।
13. आज हम बस बातें ही करते रहते है, हमारी माँगे तो बड़ी-बड़ी हैं, किंतु व्यक्तिगत रूप से हम देश के लिए कुछ भी नहीं करते हैं। लेखक देश के प्रति हमारे कर्त्तव्य की याद दिला रहा है।
14. लेखक मेंढक मंडली पर पानी डालना व्यर्थ मानते थे क्योंकि इस समय पानी की भारी कमी है। लोगों ने कठिनता से पीने के लिए बाल्टी भर पानी इकट्ठा कर रखा है। उसे इस मेंढक मंडली पर फेंकना पानी की घोर बरबादी है। इससे देश व समाज की क्षति होती है। वह पानी को इस तरह फेंकने के सिवाय अंधविश्वास को कुछ नहीं मानता।
15. मेंढक मण्डली से लेखक का तात्पर्य गाँव के उन बालकों की टोली से है जो पूरे गाँव भर में घूम-घूम कर पानी माँगते थे और लोगों द्वारा डाले गए पानी में कीचड़ में लोट-पोट कर नहाते है। लेखक इस अन्धविश्वास के विरुद्ध था, उसके हिसाब से यह पानी की बर्बादी थी।
16. **काले मेघा पानी दे** एक सार्थक संस्मरण है। इसमें लेखक ने लोक प्रचलित विश्वास और विज्ञान के द्वंद्व का सुंदर चित्रण किया है। विज्ञान का अपना तर्क होता है और विश्वास का अपना सामर्थ्य। लेखक जहाँ तर्क के आधार पर सब कुछ सिद्ध करना चाहता है वहीं दीदी के विश्वास के सामने वह निरुत्तर हो जाता है।

OR

आज हम बस बातें ही करते रहते है कि देश में भ्रष्टाचार बढ़ता ही जा रहा है। हमारी माँगे तो बड़ी-बड़ी है, किंतु व्यक्तिगत रूप से हम देश के लिए कुछ भी नहीं करते हैं।

Section C

17. गुड़धानी अनाज और गुड़ के मिश्रण को कहते हैं। यहाँ पर गुड़धानी से तात्पर्य अच्छी फसल से है। हमारी अर्थव्यस्था कृषि पर आधारित है, और कृषि वर्षा पर निर्भर होती है, अच्छी वर्षा से फसल भी अच्छी होगी इसलिए पानी के साथ गुड़धानी की माँग की जा रही है। यहाँ गुड़धानी प्रसन्नता और खुशहाली का प्रतीक भी है।

OR

लेखक की जीजी लेखक से अनगिनत ऐसे धार्मिक कार्य एवं आयोजन करवाती थी जिसे वह स्वयं अंधविश्वास मानता था परंतु अपनी जीजी से अगाध प्रेम होने के कारण वह सभी कार्यों को बिना किसी तर्क के पूरा कर देता था यहाँ तक कि इंदर सेना पर पानी न फेंकने वाले उसके अपने तर्क जीजी के तर्कों के आगे हार जाते हैं इस का कारण भी जीजी से उसका भावनात्मक लगाव था। उनके प्रति आदर, सम्मान और प्रेम की भावना के कारण लेखक को विवश होकर जीजी की बात माननी ही पड़ती थी। अत: हम कह सकते हैं कि रिश्तों में हमारी भावना-शक्ति का बँट जाना विश्वासों के जंगल में सत्य की राह खोजती हमारी बुद्धि की शक्ति को कमजोर करती है और हम विवश हो जाते हैं।

18. **सिल्वर वैडिंग** कहानी में आधुनिक पारिवारिक मूल्यों के विघटन का यथार्थपरक चित्रण है। यशोधर के परिवार में उनके बेटे, बेटी व पत्नी हैं। ये सभी आधुनिक विचारों के समर्थक हैं। उन्हें यशोधर के आदर्श व मूल्य अप्रासांगिक नज़र आते हैं। बड़ा बेटा भूषण एक प्राइवेट कंपनी में अच्छा वेतन पाता है। दूसरा बेटा आई०ए०एस० की तैयारी कर रहा है। तीसरा बेटा छात्रवृत्ति लेकर अमेरिका गया। बेटी अपनी मर्जी से शादी करना चाहती है। पत्नी अपने पुराने कष्टों के लिए पति को जिम्मेदार मानती है। यह पीढ़ी मौज-मस्ती में विश्वास रखती है। ये भौतिक संसाधनों को जीवन का अंतिम सत्य मानते हैं। वे किसी कार्य को करने के लिए अपने पिता से सलाह लेने की जरूरत भी नहीं समझते। दूसरी तरफ यशोधर बाबू रामलीला करवाने, रिश्तेदारों के मोह, सादगीपूर्ण जीवन, नीरस जीवन आदि मूल्यों में विश्वास रखते हैं। कई जगह वे संतान की प्रगति से ही ईर्ष्या करते हुए दिखाई देते हैं। इन सब कारणों से परिवार उन्हें कोई तवज्जो नहीं देता। इस प्रकार परिवार में तनाव होता है। पारिवारिक मूल्य विघटित होते जाते हैं।
19. यशोधर बाबू किशनदा को बार-बार याद करते हैं। उनका विकास किशनदा के प्रभाव से हुआ है। वे किशनदा की प्रतिच्छाया हैं। यशोधर छोटी उम्र में ही दिल्ली आ गए थे। किशनदा ने उन्हें घर में आसरा दिया उनको आर्थिक मदद देकर नए शहर में रहने के लिए सहारा बने तथा नौकरी दिलाई। यशोधर बाबू उनकी हर बात का अनुकरण करते थे। ऑफिस, टहलना, बात कहकर मुस्कराना, रिटायरमेंट के बाद गाँव जाना आदि सभी पर किशनदा का प्रभाव है। यहाँ तक कि उनके सभी क्रियाकलापों में किशनदा का ही प्रभाव स्पष्ट रूप से परिलक्षित होता है।
यह उनका सामर्थ्य ही कहा जायेगा क्योंकि वे विषम परिस्थितियों में भी अपने आदर्श को नहीं भूलते और उनके द्वारा बताये गए मार्ग पर चलते हैं; बावजूद इसके कि उन्हें अनेक कष्टों से गुजरना पड़ा, लोगों की बातें सुननी पड़ीं एवं परिवार में एवं ऑफिस के लोगों से मतभेद हुआ।
20. यशोधर बाबू डेमोक्रेट बाबू थे। वे हरगिज यह दुराग्रह नहीं करना चाहते थे कि बच्चे उनके कहे को पत्थर की लकीर मानें। अतः बच्चों को अपनी इच्छा से काम करने की पूरी आज़ादी थी। यशोधर बाबू तो यह भी मानते थे कि आज बच्चों को उनसे कहीं ज़्यादा ज्ञान है, मगर अनुभव का अपना अलग महत्त्व होता है। अतः वे सिर्फ इतना भर चाहते थे कि बच्चे जो कुछ भी करें, उनसे पूछ जरूर लें। इस तरह हम यह कह सकते हैं कि वे स्वयं चाहे जितने पुराणपंथी थे, बच्चों को स्वतंत्र जीवन जीने देते थे।

Solution

Class 12 - Physical Education

Descriptive

Section A

1. **(d)** Probiotics
   Explanation: Probiotics
2. **(b)** Whole grain food
   Explanation: Whole grain food
3. **(b)** They help carry out metabolic reactions
   Explanation: They help carry out metabolic reactions
4. **(a)** According to the needs of the person
   Explanation: According to the needs of the person
5. **(d)** Sthira Sukham Asanam
   Explanation: Sthira Sukham Asanam
6. **(a)** Vajrasana
   Explanation: This asana Enhances blood circulation in the lower abdomen, thus improves digestion.
7. **(d)** Speed
   Explanation: Speed
8. **(c)** Oppositional defiant disorder
   Explanation: Oppositional defiant disorder
9. **(d)** OCD
   Explanation: OCD
10. **(d)** Disability
    Explanation: Disability

Section B

11. reduce calorie contant, reduce fatty and fried food,etc
12. Tolerance is takinng food excessive and allergy is fatal.
13. accumulation of body fat.help in digestion, reduce belly fat etc.
14. The symptoms of ADHD in children are as follows:
    a. They usually forget about daily activities.
    b. They feel problem in organizing daily activities.
    c. They are easily distracted.
    d. They usually bounce when sitting.
    e. They become restless.
    f. They have problems in playing quietly.
    g. They usually talk excessively.
15. 111

Section C

16. 111
17. 111