Atomic Energy Central School No. 4 Rawatbhata

Confidence Test – 1 (2017-18)

Time : 3 hours Class XII, *English* *Maximum Marks : 100*

General Instructions :

(i) *This paper is divided into three sections: A, B and C. All the sections are* ***compulsory****.*

(ii) *Separate instructions are given with each section and question, wherever necessary. Read these instructions very carefully and follow them faithfully.*

(iii) *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 : **12**

1 We sit in the last row, bumped about but free of stares. The bus rolls out of the dull crossroads of the city, and we are soon in open countryside, with fields of sunflowers as far as the eye can see, their heads all facing us. Where there is no water, the land reverts to desert. While still on level ground, we see in the distance the tall range of the Mount Bogda, abrupt like a shining prism laid horizontally on the desert surface. It is over 5,000 metres high, and the peaks are under permanent snow, in powerful contrast to the flat desert all around. Heaven Lake lies part of the way up this range, about 2,000 metres above sea-level, at the foot of one of the higher snow-peaks.

2 As the bus climbs, the sky, brilliant before, grows overcast. I have brought nothing warm to wear: it is all down at the hotel in Urumqi. Rain begins to fall. The man behind me is eating overpoweringly smelly goats' cheese. The bus window leaks inhospitably but reveals a beautiful view. We have passed quickly from desert through arable land to pasture, and the ground is now green with grass, the slopes dark with pine. A few cattle drink at a clear stream flowing past moss-covered stones; it is a Constable landscape. The stream changes into a white torrent, and as we climb higher I wish more and more that I had brought with me something warmer than the pair of shorts that have served me so well in the desert. The stream (which, we are told, rises in Heaven Lake) disappears, and we continue our slow ascent. About noon, we arrive at Heaven Lake, and look for a place to stay at the foot, which is the resort area. We get a room in a small cottage, and I am happy to note that there are thick quilts on the beds.

3 Standing outside the cottage we survey our surroundings. Heaven Lake is long, sardine-shaped and fed by snowmelt from a stream at its head. The lake is an intense blue, surrounded on all sides by green mountain walls, dotted with distant sheep. At the head of the lake, beyond the delta of the inflowing stream, is a massive snow-capped peak which dominates the vista; it is part of a series of peaks that culminate, a little out of view, in Mount Bogda itself.

4 For those who live in the resort, there is a small mess-hall by the shore. We eat here sometimes, and sometimes buy food from the vendors outside, who sell kabab and naan until the last buses leave. The kababs, cooked on skewers over charcoal braziers, are particularly good; highly spiced and well-done. Horse's milk is available too from the local Kazakh herdsmen, but I decline this. I am so affected by the cold that Mr. Cao, the relaxed young man who runs the mess, lends me a spare pair of trousers, several sizes too large but more than comfortable. Once I am warm again, I feel a pre-dinner spurt of energy — dinner will be long in coming — and I ask him whether the lake is good for swimming in.

5 "Swimming?" Mr. Cao says. "You aren't thinking of swimming, are you ?"

6 "I thought I might," I confess. "What's the water like ? "

7 He doesn't answer me immediately, turning instead to examine some receipts with exaggerated interest. Mr. Cao, with great off-handedness, addresses the air. "People are often drowned here'' he says. After a pause, he continues. "When was the last one ?''This question is directed at the cook, who

is preparing a tray of mantou (squat, white steamed bread rolls), and who now appears, wiping his doughy hand across his forehead**.** "Was it the Beijing athlete? " asks Mr. Cao.

On the basis of your understanding of the above passage complete the statements given below with the help of the options that follow : **1X4=4**

(a) One benefit of sitting in the last row of the bus was that the narrator enjoyed the bumps.
  (i) no one stared at him.
  (ii) he could see the sunflowers.
  (iii) he avoided the dullness of the city.

(b) The narrator was travelling to
  (i) Mount Bogda.
  (ii) Heaven Lake.
  (iii) a 2,000-metre high snow-peak.
  (iv) Urumqi.

(c) On reaching the destination the narrator felt relieved because
  (i) he had got away from the desert.
  (ii) a difficult journey had come to an end.
  (iii) he could watch the snow-peak.
  (iv) there were thick quilts on the beds.

(d) Mount Bogda is compared to
  (i) a horizontal desert surface.
  (ii) a shining prism.
  (iii) a Constable landscape.
  (iv) the overcast sky.

Answer the questions given below briefly : ***1X6=6***

(e) Which two things in the bus made the narrator feel uncomfortable ?

(f) What made the scene look like a Constable landscape ?

(g) What did he regret as the bus climbed higher ?

(h) Why did the narrator like to buy food from outside ?

(i) What is ironic about the pair of trousers lent by Mr. Cao ?

(j) Why did Mr. Cao not like the narrator to swim in the lake ?

(k) Find words from the passage which mean same as the following :**1X2=2**

(i) sellers (Para 4)

(ii) increased (Para 7) .

Q.2. Read the passage given below and answer the questions that follow : *10*

1 Thackeray reached Kittur along with a small British army force and a few of his officers. He thought that the very presence of the British on the outskirts of Kittur would terrorise the rulers and people of Kittur, and that they would lay down their arms. He was quite confident that he would be able to crush the revolt in no time. He ordered that tents be erected on the eastern side for the fighting forces, and a little away on the western slopes tents be put up for the family members of the officers who had accompanied them. During the afternoon and evening of 20th October, the British soldiers were busy making arrangements for these camps.

2 On the 21st morning, Thackeray sent his political assistants to Kittur fort to obtain a written assurance from all the important officers of Kittur rendering them answerable for the security of the treasury of Kittur. They, accordingly, met Sardar Gurusiddappa and other officers of Kittur and asked them to comply with the orders of Thackeray. They did not know that the people were in a defiant mood. The commanders of Kittur dismissed the agent's orders as no documents could be signed without sanction from Rani Chennamma.

3 Thackeray was enraged and sent for the commander of the Horse Artillery, which was about 100 strong, and ordered him to rush his artillery into the Fort and capture the commanders of the Desai's army. When the Horse Artillery stormed into the fort, Sardar Gurusiddappa, who had kept his men on full alert, promptly commanded his men to repel and chase them away. The Kittur forces made a bold front and overpowered the British soldiers.

4 In the meanwhile, the Desai's guards had shut the gates of the fort and the British Horse Artillery men, being completely overrun and routed, had to get out through the escape window. Rani's soldiers chased them out of the fort, killing a few of them until they retreated to their camps on the outskirts.

5 A few of the British had found refuge in some private residences, while some were hiding in their tents. The Kittur soldiers captured about forty persons and brought them to the palace. These included twelve children and a few women from the British officers' camp. When they were brought in the presence of the Rani, she ordered the soldiers to be imprisoned. For the women and children she had only gentleness, and admonished her soldiers for taking them into custody. At her orders, these women and children were taken inside the palace and given food and shelter. Rani came down from her throne, patted the children lovingly and told them that no harm would come to them.

6 She, then, sent word through a messenger to Thackeray that the British women and children were safe and could be taken back any time. Seeing this noble gesture of the Rani, he was moved. He wanted to meet this gracious lady and talk to her. He even thought of trying to persuade her to enter into an agreement with the British to stop all hostilities in lieu of an *inam* (prize) of eleven villages. His offer was dismissed with a gesture of contempt. She had no wish to meet Thackeray. That night she called Sardar Gurusiddappa and other leading Sardars, and after discussing all the issues came to the conclusion that there was no point in meeting Thackeray who had come with an army to threaten Kittur into submission to British sovereignty.

On the basis of your understanding of the above passage, complete the statements given below with the help of the options that follow: 1X2=2

(a) Thackeray was a/an

i)British tourist. ii)army officer. iii)advisor to Rani of Kittur. iv)treasury officer.

(b) British women and children came to Kittur to

i)visit Kittur. ii)enjoy life in tents. iii)stay in palace. iv)give company to army officers.

Answer the following questions briefly : 1X 6=6

(c) Why did Thackeray come to Kittur ?

(d) Why did Kittur officials refuse to give the desired assurance to Thackeray?

(e) What happened to the Horse Artillery ?

(f) How do we know that the Rani was a noble soul ?

(g) How, in your opinion, would the British women have felt after meeting the Rani ?

(h) Why did the Rani refuse to meet Thackeray ?

(i) Find words from the passage which mean the same as the following: 1X 2=2

(i) aggressive/refusing to obey (Para 2)

(ii) entered forcibly (Para 3)

Q.3. Read the passage given below and answer the questions that follow : 8

The most alarming of man's assaults upon the environment is the contamination of air, earth, rivers and sea with lethal materials. This pollution is for the most part irrevocable; the chain of evil it initiates is for the most part irreversible. In this contamination of the environment, chemicals are the sinister partners of radiation in changing the very nature of the world; radiation released through nuclear explosions into the air, comes to the earth in rain, lodges into the soil, enters the grass or corn, or wheat grown there and reaches the bones of a human being, there to remain until his death. Similarly,

chemicals sprayed on crops lie long in soil,entering living organisms, passing from one to another in a chain of poisoning and death.Or they pass by underground streams until they emerge and combine into new forms that kill vegetation, sicken cattle, and
harm those who drink from once pure wells.

It took hundreds of millions of years to produce the life that now inhabits the earth and reach a state of adjustment and balance with its surroundings. The environment contains elements that are hostile as well as supporting. Even within the light of the sun, there are short-wave radiations with power to injure. Given time, life has adjusted and a balance reached. For time is the essential ingredient, but in the modern world there is no time.

The rapidity of change and the speed with which new situations are created follow the heedless pace of man rather than the deliberate pace of nature. Radiation is no longer the bombardment of cosmic rays; it is now the unnatural creation of man's tampering with the atom. The chemicals to which life is asked to make adjustments are no longer merely calcium and silica and copper and all the rest of the minerals washed out of the rocks and carried in the rivers to the sea; they are the synthetic creations of man's inventive mind, brewed in his laboratories, and having no counterparts in nature.

(a) On the basis of your understanding of the above passage, make notes on it using headings and sub-headings. Use recognizable abbreviations (wherever necessary— minimum 4) and a format you consider suitable. 5

(b) Write a summary of the passage in about 80 words. 3

SECTION B — (Writing Skills) 30

4. Your friend, P.V. Sathish, has invited you to attend the wedding of his sister, Jaya. You find that you have an important paper of pre-board examination on the day of the wedding. Thus you cannot attend the event. Write in about 50 words a formal reply to the invitation expressing your regret. You are Puneet/Puneeta Vij, M-114, Fort Road, Chennai. **4**

OR

You are Vikram/Sonia, an electronics engineer who has recently returned from the U.S. and looking for a suitable job in the IT industry. Draft an advertisement in about 50 words for the Situations Wanted column of a national newspaper. Your contact number is 9193010203.

5. You are aditi /aditya from 7-S Najafgarh. You are interested in joining Yoga and Meditation centre of your locality as a student.Write a letter to the chairman of the centre asking about various particulars of the admission and other related information. **6**

OR

National Book Trust organised a week-long book fair at Anna Grounds, Chennai. You visited the fair and bought a few books. You were pleased with the arrangements, enthusiasm of the visitors and the fact that books have not yet lost their relevance in the world of the Internet. Write a letter in 120 – 150 words to the editor of a local newspaper to express your feelings. You are Lalit/Latha, 112, Mount Road, Chennai.

6.You are Mamta/Mohan. You find Corruption as the biggest impediment in the development of a nation. You strongly believe that youth can play a very important role in fighting the menace of corruption. Write an article on the role of youth in fighting corruption. **10**

OR

History Society of Kendriya Vidyalaya, Krishna Nagar sent a group of students to visit a place of historical interest. You, Anant/Anita, were its leader. Write a report in 150 – 200 words for the school newsletter on the tour, describing the place, its history, how you reached there and all that you have learnt.

7. Holi is a festival of colours. It expresses pure and simple joy. Sometimes we start throwing coloured water and that too on strangers. As the Head boy / girl of your school write a speech in 150 – 200 words that you will deliver in the morning assembly of your school, describing why Holi is played and how it should be played. **10**

OR

"It is cruel to put stray dogs to sleep." Write a debate in 150 – 200 words either for or against the motion.

SECTION C (Literature : Textbooks and Long Reading Text) 40

8. Read the extract given below and answer the questions that follow : ***1X4=4***

It would be an exotic moment
without rush, without engines,
we would all be together
in a sudden strangeness.

(a) Name the poem and the poet.
(b) Which moment is referred to here and how will it be?
(c) How would we feel at that moment ?
(d) How will it bring all of us together?

OR

Aunt Jennifer's fingers fluttering through her wool
Find even the ivory needle hard to pull.
The massive weight of Uncle's wedding band
Sits heavily upon Aunt Jennifer's hand.

(a) What is Aunt Jennifer doing with her wool ?
(b) Why does she find it difficult to pull her ivory needle ?
(c) What does 'wedding band' stand for ?
(d) Describe the irony in the third line.

9. Answer any four of the following questions in 30 – 40 words each: **3X4=12**

(a) Why were some elderly persons occupying the back benches that Day ? (The Last Lesson)
(b) Why did Jansie discourage Sophie from having dreams ?
(c) Having looked at her mother, why does Kamala Das look at the Young children?
(d) How would keeping quiet affect life in and around the sea ?
(e) Why did the Maharaja decide to get married?
(f) What is mother Skunk's role in the story?

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

Describe the bond between Geoff and Sophie in spite of differences in their temperament and thinking.

OR

What were the steps taken by Gandhiji to solve the problems of social and cultural backwardness in the villages of Champaran?

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

In India, the so-called lower castes have been treated cruelly for a long time. Who advised Bama to fight against this prejudice, when and how?

OR

How did the negligence of the prison officers prove to be a boon for Evans?

12. Answer the following question in 120 – 150 words 6

Attempt a character sketch of Dr. Kemp as a law-abiding citizen.

OR

Lammeter sisters have money but not class or education. What do you think about them ?

13. Attempt the following question in 120 – 150 words : ***6***

How was Griffin put to death ?

OR

How did Silas' treatment of Sally Oates affect his life at Raveloe?

ATOMIC ENERGY CENTRAL SCHOOL-4, RAWATBHATA

FIRST CONFIDENCE EXAMINATION (2017-18)

Time allowed: 3 hours Class – XII, PHYSICS Maximum Marks: 70

General Instructions:

(i) ***All*** *questions are compulsory. There are* ***26*** *questions in all.*

(ii) This question paper has ***five*** *sections:Section A,Section B,Section C, Section D & Section E.*

(iii) Section A contains ***five*** *questions of* ***one*** *mark each, Section B contains* ***five*** *questions of* ***two*** *marks each, Section C contains* ***twelve*** *questions of* ***three*** *marks each, Section D contains one value based question of* ***four*** *marks and Section E contains* ***three*** *questions of* ***five*** *marks each.*

(iv)There is no overall choice. However, an internal choice has been provided in one question of two marks, one question of three marks and all the three questions of five marks weightage. You have to attempt only one of the choices in such questions.

(v) You may use the following values of physical constants wherever necessary:

$c = 3 \times 10^{8} ms^{-1}$, $h = 6.6 \times 10^{-34} Js$, $e = 1.6 \times 10^{-19} C$, $\mu_0 = 4\pi \times 10^{-7} TmA^{-1}$

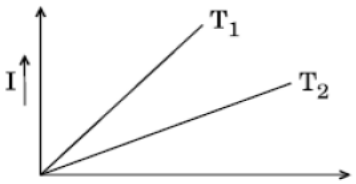
SECTION A

1. Two identical coils each of self-inductance L are connected in series and are placed so close to each other that all the flux from one coil links with the other. What is the total self-inductance of the system?

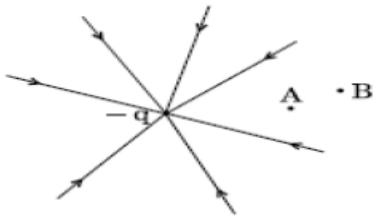
2.What happens to width of depletion layer of a p-n junction when a forward bias is applied?

3. Why does bluish colour predominate in a clear sky?

4. I – V graph for a metallic wire at two different temperatures, T_1 and T_2 is as shown in the figure. Which of the two temperatures is lower & why?



5. The field lines of a negative point charge are as shown in the figure. Does the kinetic energy of a small negative charge increase or decrease in going from B to A?



SECTION B

6. Write two factors which justify the need of modulating a low frequency signal into high frequencies before transmission.

7. The maximum kinetic energy of the photoelectrons gets doubled when the wavelength of light incident on the surface changes from λ_1 to λ_2. Derive the expressions for the threshold wavelength λ_0 and work function for the metal surface.

8. When an electron in hydrogen atom jumps from the third excited state to the ground state, how would the de Broglie wavelength associated with the electron change? Justify your answer.

9. Define equipotential surface. Why is the electric field at any point on the equipotential surface is directed normal to the surface?

10. You are given two converging lenses of focal lengths 1·25 cm and 5 cm to design a compound microscope. If it is desired to have a magnification of 30, find out the separation between the objective and the eyepiece.

OR

A small telescope has an objective lens of focal length 150 cm and eyepiece of focal length 5 cm. What is the magnifying power of the telescope for viewing distant objects in normal adjustment?

If this telescope is used to view a 100 m tall tower 3 km away, what is the height of the image of the tower formed by the objective lens?

SECTION C

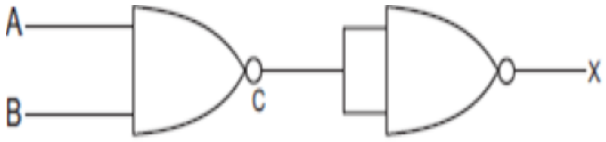
11. Define the activity of a radioactive sample. Write its S.I. unit. Calculate the wavelengths of the first member of Lyman and first member of Balmer Series.

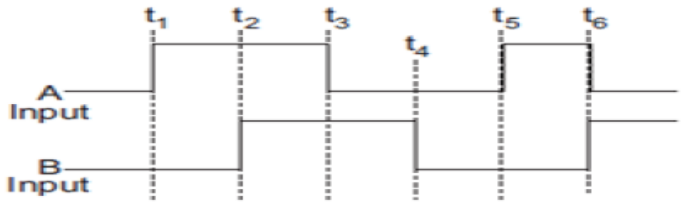
OR

In the study of Geiger-Marsdon experiment on scattering of particles by a thin foil of gold, draw the trajectory of α-particles in the coulomb field of target nucleus. Explain briefly how one gets the information on the size of the nucleus from this study.

From the relation $R = R_0 A^{1/3}$, where R_0 is constant and A is the mass number of the nucleus, show that nuclear matter density is independent of A.

12. Draw the output wave form at *X*, using the given inputs *A, B* for the logic circuit shown below. Also write the truth table for the given circuit





13. State clearly how an un-polarised light gets linearly polarised when passed through a Polaroid.

(i) Un-polarised light of intensity I_0 is incident on a Polaroid P_1 which is kept near another polaroid P_2 whose pass axis is parallel to that of P_1. How will the intensities of light, I_1 and I_2, transmitted by the Polaroid's P_1 and P_2 respectively, change on rotating P_1 without disturbing P_2?

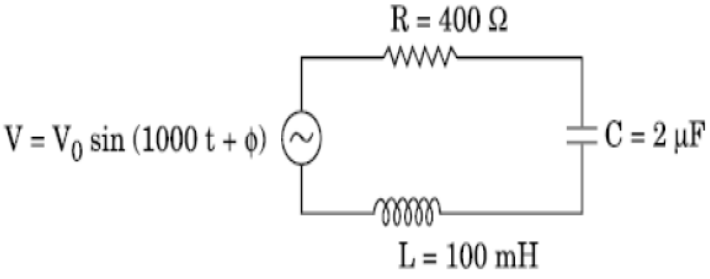
(ii) Write the relation between the intensities I_1 and I_2.

14. A uniform magnetic field **B** is set up along the positive x-axis. A particle of charge 'q' and mass 'm' moving with a velocity **v** enters the field at the origin in X-Y plane such that it has velocity components both along and perpendicular to the magnetic field **B**.Trace, giving reason, the trajectory followed by the particle. Find out the expression for the distance moved by the particle along the magnetic field in one rotation.

15. Use Huygens' Principle to show how a plane wave front propagates from a denser to rarer medium. Hence verify Snell's law of refraction.

16. (a) Determine the value of phase difference between the current and the voltage in the given series LCR circuit.

(b) Calculate the value of the additional capacitor which may be joined suitably to the capacitor C that would make the power factor of the circuit unity.



17. How are electromagnetic waves produced? What is the source of energy of these waves?

Draw a schematic sketch of the electromagnetic waves propagating along the + x-axis. Indicate the directions of the electric and magnetic fields. Write the relation between the velocity of propagation and the magnitudes of electric and magnetic fields.

18. Find the relation between drift velocity and relaxation time of charge carriers in a conductor.

A conductor of length L is connected to a d.c. source of voltage 'V'. If the length of the conductor is tripled by stretching it, keeping 'V' constant, explain how its drift velocity would be affected.

19. Draw a circuit diagram of a C.E. transistor amplifier. Briefly explain its working and write the expression for (i) current gain, (ii) voltage gain of the amplifier.

20. Define modulation index. Why its value is kept, in practice, less than one?

A message signal of frequency 10 kHz and peak voltage of 10 volts is used to modulate a carrier of frequency 1 MHz and peak voltage of 20 volts. Determine (a) modulation index, (b) the frequencies of the side bands produced.

21. State the underlying principle of a potentiometer. Write two factors by which current sensitivity of a potentiometer can be increased. Why is a potentiometer preferred over a voltmeter for measuring the emf of a cell?

22. (a) Write three characteristic properties of nuclear force.

(b) Draw a plot of potential energy of a pair of nucleons as a function of their separation. Write two important conclusions that can be drawn from the graph.

SECTION D

23. A group of students while coming from the school noticed a box marked "Danger H.T. 2200 V" at a substation in the main street. They did not understand the utility of such a high voltage, while they argued; the supply was only 220 V. They asked their teacher this question the next day. The teacher thought it to be an important question and therefore explained to the whole class.

Answer the following questions:

(i) What device is used to bring the high voltage down to low voltage of a.c. current and what is the principle of its working?

(ii)Is it possible to use this device for bringing down high dc voltage to low voltage?Explain.

(iii) Write the values displayed by the students and the teacher.

SECTION E

24. (a) Define electric flux. Write its S.I. unit.

(b)Using Gauss law,obtain electric flux due to a point charge q enclosed in a cube of side a.

(c) Show that the electric field due to a uniformly charged infinite plane sheet at any point distant x from it , is independent of x.

OR

(a) Derive the expression for the energy stored in a parallel plate capacitor. Hence obtain the expression for the energy density of the electric field.

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

25. Explain, using a labelled diagram, the principle and working of a moving coil galvanometer. What is the function of (i)uniform radial magnetic field, (ii) soft iron core?

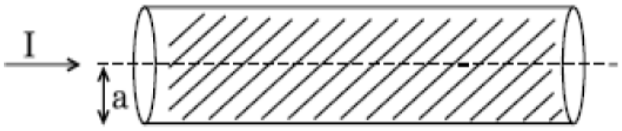
Define the terms (i) current sensitivity and (ii) voltage sensitivity of a galvanometer. Why does increasing the current sensitivity not necessarily increase voltage sensitivity?

OR

(a) State Ampere's circuital law. Show that the magnetic field B at a distance r outside the straight infinite wire carrying current I is tangential and is given by $B = \mu_0 I / (2\pi r)$.

(b) Consider a long straight cylindrical wire of circular cross-section of radius a, as shown in the figure. The current I is uniformly distributed across this cross-section. Calculate the magnetic field Bin the region r <a and r> a. Plot a graph of B versus r from the Centre of the wire.

26. (a) (i) 'Two independent monochromatic sources of light cannot produce a sustained interference pattern'. Give reason.



(ii) Light waves each of amplitude 'a' and frequency 'ω', emanating from two coherent light sources superpose at a point. If the displacements due to these waves is given by $y_1 = a\cos\omega t$ and $y_2 = a\cos(\omega t + \phi)$ where ϕ is the phase difference between the two, obtain the expression for the resultant intensity at the point.

(b) In Young's double slit experiment, using monochromatic light of wavelength λ, the intensity of light at a point on the screen where path difference is λ, is K units. Find out the intensity of light at a point where path difference is λ/3.

OR

(a)Use the mirror equation to deduce that: (i) an object placed between f and 2f of a concave mirror produce a real image beyond 2f.

(ii)A convex mirror always produces a virtual image independent of location of the object.

(iii) The virtual image produced by a convex mirror is always diminished in size and is located between the focus & the pole.

(b) Draw a well labeled diagram of compound microscope, and write formula for its magnifying power.

Atomic Energy Central School No-4 Rawatbhata

Confidence Test I (2017-18)

Time –3Hrs | Class- XII, Chemistry | M.M.: 70

Instructions- 1) Attempt all the questions. Use of log table is permissible.

2) Q.No. 1 to 5 are each of 1 Mark. Ans.them in about 10-15 words.

3) Q.No. 6 to 10 are each of 2 Marks. Ans .them in about 20-30words.

4) Q.No. 11 to 22 are each of 3 Mark. Ans .them in about 30-40 words.

5) Q.No. 23 isof 4 Mark.It is value based question.

6) Q.No. 24 to26 are each of 5 Marks. Ans. them in about 50-60 words.

1.Write the formula of compound of Phosphorous which is obtain when conc. HNO_3 oxidizes with P_4 ?

2. Write the IUPAC name of following compound $CH_3\ (CH_2)_2CH\ (Br)\ CH_3$

3. What is meant by selectivity & activity of catalyst?

4. Which would undergo SN^1 faster in given structure of compound.

5. what type of colloid is formed when a liquid is dispersed in a solid. Give an example?

6. i) Arrange the following compound in decreasing order of acidic strength : Phenol , Formic acid , Acetic Acid

ii) Write the mechanism of hydration of Ethane to form Alcohol (1+1)

7. Ag crystallizes with FCC unit cell with side length 409 pm calculate radius of Ag atom .

8. Draw the str. Of $H_2S_2O_7$ & $(HPO_3)_3$

9. The conductivity of0.2M KCl sol^{n}at 298 K is 0.0248 Scm^{-1} Calculate its molar conductivity?

10. State the hydrisation, magnetic behavior& geometry of [$Cr(CO)_6$] on the basis of valance bond theory.

11. i) What type of semiconductor is formed when Si doped with As?

ii) ZnO is white but it turns yellow on heating, explain why?

iii) What are Schotty defects? (3x1)

12. i) Write Nernst Eq. & calculate EMF of following cell –

$Sn(s)\ /Sn^{+2}(0.05\ M)II\ H^+(0.02M)/H_2(g)1bar$ [Given $E^0_{Sn^{+2}/Sn}$= -o.14 V]

ii) How many e-flow through a metallic wire if a current of 0.5 A is passed for 2 hours?

(2+1)

13. i) What is spectrochemical series Explain the difference between weak& strong field ligand?

ii) Explain Linkage isomerism with example? (2+1)

14. Write short notes on following –

i) Coagulation & peptisation ii) Bredig arc method iii) Kraft Temperature

OR

14. i)What type of sol is Smoke? Write its dispersed phase & dispersion medium.

ii) Differentiate between Physiosorption & Chemisorptions.

iii) What is collodion? (3x1)

15. The rate constant for the first order decomposition of H_2O_2 is given by the equation: log k= 14.34 - $1.25x10^4$ K/T

Calculate Ea for the reaction & at what temp. Will its half life be 256 min?

16. Among the following compound which is more reactive towards SN^2 reaction, towards β elimination reaction, & which is optically active-

2-Chloro pentane, 2-bromo 2- methyl butane, 1-bromopentane

Also give explanation of your answer.

17. Explain the following –

i) Mond Process of Ni refining (also write reaction) ii) column chromatography for purification of rare elements. Iii) Extraction of Au by cyanide process.

18. How would you obtain i) Benzoquinone from phenol

ii)p- bromo aniline from Aniline iii) Aniline from Benzoic Acid

19. Write the Str.& name of monomer of following monomer –

Nylon-6 , Nylon66, Buna –S, terelene , Teflon, Natural Rubber.

20. Explain the following with one example of each –

i) Cationic detergent ii) Anti fertility drug iii) Artificial Sweeteners

21 Give reason for the following – i) PCl_5 is more covalent than PCl_3

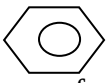
ii) Fe on reaction with HCl forms Fe Cl_2 not $FeCl_3$.

iii) H_3PO_2 is stronger reducing agent than H_3PO_3

22. i) Arrange these in decrease order of pK_b –

$C_2H_5NH_2$, CH_3NH_2 , $C_6H_5NH_2$, $(C_2H_5)_2NH$,

ii) Identify A,B,C, & D in the following sequence of reaction-

A $\xrightarrow{NaOH\ /Br2}$ B $\xrightarrow{NaNO2\ /HCl}$ C $\xrightarrow{D}$ 

23. After watching programme on T.V. about the presence of carcinogenic pot.bromate & Potassium iodide in bread & other bakery products, Parul a XII class student decided to make others aware about this. She consulted school Principal & requested to stop the selling bakery items in school canteen. The Principal took immediate action, & instruct canteen manager to replace these bakery items with fresh fruits.

i) What value shown by Paul?

ii) What is meant by carcinogenic chemical?

iii) Which polysaccharide present in bread?

iv) Name two water soluble vitamins.

24.i)Account for the following – a) Transition metals form alloy.

b) Zn, Cd & Hg are soft metals

c) E^0 value for Mn^{3+}/ Mn^{2+} couple is highly positive (+1.57 V) as compared to Cr^{3+}/ Cr^{2+}

ii) Describe similarity & dissimilarity of Lanthanoids & Actinoids (2-2 each)

OR

i)Account for the following – a)How is the variability in oxidation state of Transition metals different from that of p- block elements?

b) Out of Cu^{+}& Cu^{++} which ion is unstable in aqueous soln. & why

c)Orange color of $Cr_2O_7^{-2}$ ion changes to yellow when treated with alkali,why?

ii) Explain lanthanoid contraction. What are its consequences?

25. i) Explain +ve& -ve deviation of non ideal Sol^{n} & also draw its graph.

ii) Calculate maximum molarity of CuS in aq.Sol^{n},i f $K_{s.p}$ value of CuS is $6x10^{-16}$

OR

i) Why some times we get abnormal molecular mass using colligative properties? Explain it.

ii) Calculate amount of $CaCl_2$ (i=2.47) to be dissolved in 2.5 L water so that osmotic pr. Is 0.75 atm. At 27^{0} C. (2+3)

26. i) Distinguish between the following by chemical test - a) Acetophenone & benzoquinone b) Phenol & benzoic acid

ii) Account for the following – a) Aldehydes are more reactive than ketone.

a) Aniline does not undergo Friedel craft Reaction .

b) Carboxylic acid has higher b.p. than alcohol.

OR

i)How will you convert the following- a) benzoic acid to benzaldehyde

b) Acetophenone to benzoic acid

c) Ethanoic acid to 2- hydroxyethanoic acid

ii) An organic compound contains 69.7% Carbon 11.63% H & rest Oxygen. The molecular mass of the compound is 86 It does not reduce tollens reagent & not formsaddition compound with NaHCO3 & give +ve iodoform test. On vigorous oxidation it gives ethanoic acid & propanoic acid. Identify compound & write its structure.

Atomic Energy Central School No.4 Rawatbhata

Confidence Examination - I (2017-18)

Time : 3 hours Class XII, Mathematics M M: 100

General Instructions:

(i) All questions are compulsory.
(ii) This question paper contains 29 questions.
(iii) Question 1- 4 in Section A are very short-answer type questions carrying 1 mark each.
(iv) Question 5-12 in Section B are short-answer type questions carrying 2 marks each.
(v) Question 13-23 in Section C are long-answer-I type questions carrying 4 marks each.
(vi) Question 24-29 in Section D are long-answer-II type questions carrying 6 marks each.

Section A

1. What is the principal value of $\tan^{-1}\left(tan\frac{2\pi}{3}\right)$
2. A and B are square matrices of order 3 each, |A | = 2 and |B | = 3. Find |3AB|
3. What is the distance of the point (p, q, r) from the x-axis?
4. Let f : R → R be defined by $f(x) = 3x^2-5$ and g : R → R be defined by $g(x)= \frac{x}{x^2+1}$.

Section –B

Questions from 5 to 12 are of 2 marks each.

5. How many equivalence relations on the set {1,2,3} containing (1,2) and (2,1) are there in all ? Justify your answer.
6. Without expanding the determinant prove that $\begin{vmatrix} 0 & 2 & -3 \\ -2 & 0 & 4 \\ 3 & -4 & 0 \end{vmatrix}=0$.
7. If $e^y (x + 1) = 1$, show that $\frac{dy}{dx} = e^{-y}$
8. Find the sum of the order and the degree of the following differential equations $\frac{d^2y}{dx^2} + \sqrt[3]{\frac{dy}{dx}}+(1+x)=0$
9. Find the Cartesian and Vector equations of the line which passes through the point (-2,4,-5) and parallel to the line given by $\frac{x+3}{3} = \frac{y-4}{5}= \frac{8-z}{-6}$
10. Solve the following Linear Programming Problem graphically: Maximize Z = 3x + 4y subject to the constraints $x+y \leq 4$, $x \geq 0$ and $y \geq 0$.
11. A couple has 2 children. Find the probability that both are boys, if it is known that (i) one of them is a boy (ii) the older child is a boy.
12. The sides of an equilateral triangle are increasing at rate of 2 cm/sec. Find the rate at which its area increases,when side is 10 cm long.

Section – C

Questions from 13 to 23 are of 4 marks each.

13. If $A + B + C = \pi$ then find the value of $\begin{vmatrix} \sin(A+B+C) & \sin B & \cos C \\ -\sin B & 0 & \tan A \\ \cos(A+B) & -\tan A & 0 \end{vmatrix}$

OR

Using properties of determinant, prove that

$\begin{vmatrix} b+c & a-b & a \\ c+a & b-c & b \\ a+b & c-a & c \end{vmatrix} = 3abc-a^3-b^3-c^3$

14. It is given that for the function $f(x) = x^3 - 6x^2 + ax + b$ Rolle's theorem holds in [1,3] with $c = 2+\frac{1}{\sqrt{3}}$. Find a and b.
15. Determine for what values of x, $f(x) = x^3+\frac{1}{x^3}$ is strictly increasing or strictly decreasing.

OR

Find the point on the curve $y = x^3-11x+5$ at which tangent is $y= x-11$

16. Evaluate $\int_0^2 x^2 + 3dx$ as limit of sums.

17. Find the area of region bounded by y-axis, $y=\cos x$ and $y=\sin x$, $0\leq x\leq \frac{\pi}{2}$

18. Prove that $x^2-y^2=c(x^2+y^2)^2$ is the general solution of differential equation $(x^3-3xy^2)\,dx = (y^3-3x^2y)\,dy$, where C is a parameter.

Or

Find the general solution of differential equation $x^2 \frac{dy}{dx} - xy = 1 + \cos\left(\frac{y}{x}\right)$

19. If the vectors $\vec{a}+\vec{b}+\vec{c}=0$, $|\vec{a}|=3$, , $|\vec{b}|=5$ and , $|\vec{c}|= 7$ find the angle between a and b.

20. A p ane meets the coo dinate axes in A B and C such that the centroid of Δ ABC is the point (α, β,γ) . Show that the equation of the plane is $\frac{x}{\alpha}+\frac{y}{\beta}+\frac{z}{\gamma} = 3$.

21. If a 20 year old girl drives her car at 25 km/h, she has to spend Rs 4/km on petrol. If she drives her car at 40 km/h, the petrol cost increases to Rs 5/km. She has Rs 200 to spend on petrol and wishes to find the maximum distance she can travel within one hour. Express the above problem as a Linear Programming Problem. Write any one value reflected in the problem.

22. The random variable x has probability distribution of following form

$$P(x) = \begin{cases} k, if\ x = 0 \\ 2k, if\ x = 1 \\ 3k, if\ x = 2 \\ 0, otherwise \end{cases}$$

i)Find value of k ii)Find P($X<2$) iii)Find P ($X\leq 2$) iv)Find P($X\geq 2$)

23. A can solve 90% of problems given in a book and B can solve 70% . what is the probability that atleast one of them will solve the problem, selected at random from the book.

SECTION-D

Questions from 24 to 29 are of 6 marks each

24. Using properties of integral evaluate $\int_0^{\pi} \frac{x}{1+sinx}dx$

Or

$$\int_0^{\pi} \frac{xsinx}{1+cos^2x}dx$$

25. Determine the operation $*$ define below on Q is a binary operation or not $a*b= ab+1$. check whether it is commutative or associative also find the identity element.

26. Find the shortest distance between the lines $\frac{x-1}{2}=\frac{y-2}{3}=\frac{z-3}{4}$ and $\frac{x-2}{3}=\frac{y-4}{4}=\frac{z-5}{5}$

Or

Find the foot of perpendicular from the point (0,2,3) on the line $\frac{x+3}{5}=\frac{y-1}{2}=\frac{z+4}{3}$ also find the length of perpendicular.

27. If $A=\begin{pmatrix} 2 & 3 & 10 \\ 4 & -6 & 5 \\ 6 & 9 & -20 \end{pmatrix}$, find A^{-1}. Using A^{-1} solve the system of equations

$\frac{2}{x}+\frac{3}{y}+\frac{10}{z} = 2$, $\frac{4}{x}+\frac{6}{y}+\frac{5}{z} = 5$, $\frac{6}{x}+\frac{9}{y} - \frac{20}{z} = -4$

28. Using integration find the area of region bounded by the triangle whose vertices are (-2,1), (0,4) & (2,3).

29. A farmer wants to construct a circular garden and a square garden in his field. He wants to keep the sum of their parameter 600 meter. Prove that the sum of their areas is the least, when the side of the square garden is double the radius of the circular garden. Do you think that a good planning can save energy time and money.

Atomic Energy Central School No 4 Rawatbhata
Confidence Examination I (2017-18)
Time: 3Hrs Class – XII , Biology M.M. 70

General Instruction:-

- There are a total of 26 questions and five sections in the questions paper. All questions are compulsory.
- This question paper consists of five sections A, B, C, D and E section 'A' consists of 5 question of one mark each. Section 'B' is of 5 questions of 2 marks each, section 'C' is of 12 questions of 3 marks each, section 'D' is contain value based one question and of four marks and three questions in section 'E' and each one of 5 marks.
- There is no overall choice. However an internal choice has been provided in one questions of 2 marks one question of 3 marks and all questions of 5 marks. Attempt only one choice in all such questions.
- Wherever necessary, the diagrams drawn should be neat and properly labeled.

SECTION 'A'

1. Banana is a true fruit, as well as a parthenocarpic fruit.Give one reason.
2. From which part, generally pollen tube enters in the ovule?
3. Give an example of a codon having dual function.
4. Suggest a technique to researcher who needs to separate fragment of DNA.
5. Mention two objective of setting up GEAC by our government.

SECTION 'B'

6. Explain the relationship between CFCs and ozone in the stratosphere.
7. (i) What do 'Y' and 'B' stand for in 'YAC' and 'BAC' used in Human Genome Project (HGP)?
   (ii) Expand SNP's identified by scientists in HGP.
8. Taking an example of a small pond explain how the four component of an ecosystem function as a unit.
9. Ankit wants to perform crosses for studying the inheritance of a particular trait. While selecting the organism for the study, what point should be keep in his mind?
10. Write short not on : (i) Totipotency (ii) Protoplast culture

    OR

    Expand : MALT, CMI, AIDS, NACO

SECTION 'C'

11. Give an example of an autosomal recessive trait in human. Explain its pattern of inheritance with the help of a cross.
12. How has RNAi technique help to prevent the infection of roots in tobacco plants by nematode *Meloidegyne incognitia*?
13. Explain with the help of suitable examples the three different ways by which organisms overcome their stressful conditions lasting for short duration.
14. A couple with normal vision bear a colourblind child. Work out a cross to show how is it possible and mention the sex of the affected child.
15. What is triple fusion? Where and how does it take place? Name the nuclei involved in triple fusion.
16. (i) Draw an ideal pyramid of energy upto four tropic level where 1,000,000 J energy is available (from sunlight) to the primary producer. Indicate the amount of energy available at each tropic level.
    (ii) What is ecological efficiency?
17. A patient suffering from ADA deficiency. Can he cure? How?
18. Draw a neat labeled diagram showing steps of PCR.

19. Write critical notes on the following:
    (i) Eutrophication (ii) Biological magnification (iii) Ground water depletion and ways for its replenishment.
20. What is oestrous cycle? How is it different from menstrual cycle?

    OR

    'Ca^{+2} is very important for fertilization in humans. In absence of Ca^{+2}, fertilization does not occur'. Comment.
21. (i) In eukaryotes, gene expression, i.e. formation of polypeptide chain is regulated at four different levels. Explain
    (ii) What is smog?
22. (i) How is phosphorus recycled in the nature?
    (ii) Write short notes on the: Mimicry and Camouflage.

SECTION 'D'

23. Organisms remain as individuals but interact as a group with other organisms and physical habitats and behave as population, community, ecosystem, etc.
    (i) What, according to you, are the factors that account for the formation of major biomes?
    (ii) Name any four major biomes of India.
    (iii) What value is learnt from this statement?

SECTION 'E'

24. (i) Draw a labeled longitudinal section of an albuminous seed.
    (ii) What is cancer? How normal cells get transformed into cancerous neoplastic cells? Mention the difference between viral oncogenes and cellular oncogenes.

    OR

    (i) What are different types of endosperms of an angiospermic plant?
    (ii) What are lymphoid organs? Write name of any four lymphoid organs and their function.
25. (i) How are the following formed and involved in DNA packaging in a nucleus of a cell?
    (a) Histone octomer (b) Nucleosome (c) Chromatin
    (ii) Why should we conserve biodiversity? How can we do it?

    OR

    (i) Differentiate between analogy and homology giving one example each of plant and animal, respectively.
    (ii) Distinguish between the roles of flocks and anaerobic sludge digester in sewage treatments.
26. Describe Meselson and Stathl's experiment that was carried in 1958 on E.coli. Write the conclusion they arrived at after the experiment.

    OR

    Give a genetic explanation for the following cross. When a tall plant with round seeds was crossed with dwarf pea plant with wrinkled seeds than all individual of F_1-generation were tall with round seeds. However, selfing among F_1-generation led to 9:3:3:1 phenotypic ratio.

Atomic Energy Central School No-4, Rawatbhata

Confidence Examination I (2017-18)

Time : 3 Hours Class: XII, Computer Science MM: 70

Q.1 (a) Differentiate between Call by Value and Call by Reference, with a suitable example in C++? [2]

OR

Define Macro with suitable example?

(b) Which C++ header file (s) will be included to run /execute the following C++ code? [1]

```
void main( )
{ float Last =26.5698742658;
  cout<<setw(5)<<setprecision(9)<<sqrt(Last);
}
```

(c) Rewrite the following program code after removing the error from it and underline the corrections. [2]

```
#include<iostream.h>
void main( )
{  int A[10];
   A=[3,2,5,4,7,9,10];
   for( p = 0; p<=6; p++)
      { if(A[p]%2=0)
          int S = S+A[p];
   }
   cout<<pow(S,2); }
```

(d) Observe the following C++ code and find out , which out of the given options i) to iv) are the expected correct output. Also assign the maximum and minimum value that can be assigned to the variable 'Go'. [2]

```
void main()
{ int X [4] ={100,75,10,125};
int Go = random(2)+2;
for (int  i = Go; i< 4; i++)
cout<<X[i]<<"$$";
}
```

i. 100$$75 ii. 75$$10$$125$$ iii. 75$$10$$ iv.10$$125$

(e) Find the output of the following program: [2]

```
#include<iostream.h>
void switchover(int A[ ],int N, int split)
{for(int K = 0; K<N; K++)
  if(K<split)
    A[K] += K;
  else
    A[K]*= K;
}
void display(int A[ ] ,int N)
{  for(int K = 0; K<N; K++)
    (K%2== 0) ? cout<<A[K]<<"%" : cout<<A[K]<<endl;
}
void main( )
{ int H[ ] = {30,40,50,20,10,5};
  switchover(H,6,3);
  display(H,6);
}
```

Q.2 (a) Explain the concept of Static Data Members in Class with example? [2]

(b) Answer the questions (i) and (ii) after going through the following class : [2]

```
class Exam
{   int  Rollno;
    char Cname[25];
    float Marks ;
 public :
    Exam( ) //Function 1
    {  Rollno = 0 ;
       Cname=" ";
       Marks=0.0;
    }
    Exam(int Rno, char candname) //Function 2
    {  Rollno = Rno ;
       strcpy(Cname,candname);
    }
    ~Exam( ) //Function 3
    {  cout<< "Result will be intimated shortly" <<endl ;
    }
```

```
    void Display( ) //Function 4
    {  cout<< "Roll no :"<<Rollno;
       cout<<"Name :" <<Cname;
       cout<<" Marks:"<<Marks;
    }
} ;
```

(i) Which OOP concept do Function 1 and Function 2 implement in together? Explain?

(ii) What is Function 3 called? When will it be invoked?

(c) Define a class Candidate in C++ with following specification : [4]

Private Members :

A data members Rno(Registration Number) type long

A data member Cname of type string

A data members Agg_marks (Aggregate Marks) of type float

A data members Grade of type char

A member function setGrade () to find the grade as per the aggregate marks obtained by the student. Equivalent aggregate marks range and the respective grade as shown below.

Aggregate Marks	Grade
>=80	A
Less than 80 and >=65	B
Less than 65 and >=50	C
Less than 50	D

Public members:

- A constructor to assign default values to data members:
  Rno=0, Cname="N.A", Agg_marks=0.0 and Grade='#'
- A function Getdata () to allow users to enter values for Rno. Cname, Agg_marks and call function setGrade () to find the grade.
- A function dispResult( ) to allow user to view the content of all the data members.

Give the following class definition answer the question that is follow:

d) [4]

```
class University
{ char name [20];
 protected :
   char vc[20];
public :
      void estd();
      void inputdata();
      void outputdata();
}
```

```
class College : protected University
{ int  regno;
protected
    char principal()
public :
    int  no_of_students;
    void readdata();
    void dispdata ( );
};
class Department : public College
{    char name[20];
char HOD[20];
public :
void fetchdata(int);
void displaydata( );
}
```

i). Name the base class and derived class of college. [1/2]

ii) What type of inheritance is depicted in the above class definition? [1/2]

iii) Name the data member(s) that can be accessed from function displaydata(). [1]

iv) What will be the size of an object (in bytes) of class Department? [1]

v) Whether the function estd() is accessible by the function fetchdata(), justify? [1]

Write the parameterized constructor definition for the classes given below:

e) [3]

```
class alpha
{ int a
   float b;
   char c;
public:
  ----------  //constructor definition
  …...    };
class beta
{ int x;
public:
  ……..//constructor definition
};
class gamma : public alpha, public beta
{  int g;
```

```
public:
----------// constructor definition
};
```

Q.3 (a) An integer array A [30][40] is stored along the column in the memory. If the element A[20][25] is stored at 50000, find out the location of A[25][30]. [3]

(b) Write the definition of functions Insert() and Delete() of Class Queueofbus, for the linked implemented queue containing passenger information as follows: [3]

```
struct NODE
{  int  Ticketno;
   char   PName[20];
   NODE * NEXT; };
class Queueofbus
{   NODE *Rear, *Front;
public:
    Queueofbus()
    { Rear = NULL;
      Front = NULL;
    }
    void Insert();
    void Delete();
    ~Queueofbus()
    { cout<<"Object destroyed"; }
};
```

OR

WAF in C++ (void PushST(Node * Top, Node * Ptr)) to insert a new node (* Ptr) in a dynamically allocated Stack. Assume the stack has been already existing with a set of nodes belongs to the following structure Node. Display the stack after inserting.

```
struct Node
{ int info;
  Node * Next;
};
```

(c) Write a function to sort any array of n elements using insertion sort. Array should be passed as argument to the function. [2]

(d) Write a function NewMAT(int A[][3],int r,int c) in C++, which accepts a 2d array of integer and its size as parameters divide all those array elements by 6 which are not in the range 60 to 600 (both values inclusive) in the 2d Array . [2]

(e) Evaluate the following postfix expression using stack and show the contents after execution of each Operations: 470, 5, 4, ^, 25, /, 6, *, 2, *, - [2]

Q.4 (a) Consider a file EmpDB, assuming that file may contain a set of objects belongs to class Emp. [1]

i) Write C++ statement to position the file pointer before the last object in the file.

ii) Write C++ statements to write a new object E into file at the last position.

Write a function RevText() to read a text file " Input.txt " and Count only word starting with 'I' .

Example: If value in text file is: INDIA IS MY COUNTRY

Output will be: 2

(b) Write a function in C++ to search and display details, whose destination is "Chandigarh" from binary file "Flight.Dat". Assuming the binary file is containing the objects of the following class: [2]

```
class FLIGHT
{ int Fno; // Flight Number
  char From[20]; // Flight Starting Point
  char To[20]; // Flight Destination
public:
  char  * GetFrom ( ); { return from; }
  char  * GetTo( ); { return To; }
  void input() { cin>>Fno>>; gets(From); get(To); }
  void show( ) { cout<<Fno<< ":"<<From << ":" <<To<<endl; }
};
```

(c) [3]

Q.5 (a) Differentiate between cardinality and degree of a table with the help of an example. [2]

Consider the following tables FACULTY and COURSES. Write SQL commands for the

(b) statements (I) to (IV) & give outputs for SQL queries (VI) to (VII) [7]

FACULTY

F_ID	Fname	Lname	Hire_date	Salary
102	Amit	Mishra	12-10-1998	12000
103	Nitin	Vyas	24-12-1994	8000
104	Rakshit	Soni	18-5-2001	14000
105	Rashmi	Malhotra	11-9-2004	11000
106	Sulekha	Srivastava	5-6-2006	10000

COURSES

C_ID	F_ID	Cname	Fees
C21	102	Grid Computing	40000
C22	106	System Design	16000
C23	104	Computer Security	8000
C24	106	Human Biology	15000

C25	102	Computer Network	20000
C26	105	Visual Basic	6000

I. To display details of those Faculties whose salary is greater than 12000.

II. To display the details of courses whose fees is in the range of 15000 to 50000 (both values included).

III. To increase the fees of all courses(Cname) by 500 of "System Design" Course.

IV. To display Cname, Fees which are taught by 'Sulekha'.

V. Count the courses dealt by each faculty. (Hint: use the F_ID)

VI. Select COUNT(DISTINCT F_ID) from COURSES;

VII. Select MIN(Salary) from FACULTY,COURSES where COURSES.F_ID = FACULTY.F_ID;

Q.6 (a) State and Verify Absorption law algebraically. [2]

b) Draw a logic circuit for the following Boolean expression: A.B+C.D'. [1]

(c) Write the SOP form of a Boolean function F, which is represented in a truth table as follows: [1]

A	B	C	F
0	0	0	0
0	0	1	1
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	1
1	1	0	0
1	1	1	0

(d) Obtain a simplified from for a Boolean expression:

F (U, V, W, Z) = II (0, 1, 3, 5, 6, 7, 15) [3]

(e) Minimize the following function using K- map and find out the expression

$F(A, B, C, D) = \sum (0, 2, 5, 7, 8, 9, 10, 11, 12, 13, 14, 15)$ [3]

Q.7 (a) State 2 important properties of network? Explain the topologies in brief with examples? [3]

(b) Which type of networking cable you suggest for a network, in a harsh industrial environment. [1]

(c) Explain the coaxial cable or fiber optical cable? [2]

(d) Differentiate between LAN & WAN? [2]

(e) Differentiate between message switching and packet switching? [1]

OR

Define the term Bandwidth. Give any one unit of Bandwidth.

परमाणु ऊर्जा केन्द्रीय विद्यालय क्रमांक 4 रावतभाटा

पूर्ववार्षिक परीक्षा -2017-2018

पूर्णांक – १०० कक्षा --बारहवीं,हिंदी (केन्द्रिक) समय – तीन घंटा

प्र० 1 निम्नलिखित गद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए ।

दबाव में काम करना व्यक्ति के लिए अच्छा है या नहीं ,इस बात पर प्रायः बहस होती है| कहा जाता है कि व्यक्ति अत्यधिक दबाव में नकारात्मक भावों को अपने ऊपर हावी कर लेता है,जिससे उसे अक्सर कार्य में असफलता प्राप्त होती है | वह अपना मानसिक और शारीरिक स्वास्थ्य भी खो बैठता है | दबाव को यदि ताकत बना लिया जाए ,तो न सिर्फ सफलता प्राप्त होती है , बल्कि व्यक्ति सफलता के ने मापदंड रचता है | ऐसे बहुत से उदाहरण है जब लोगों ने अपने काम के दबाव को अवरोध नहीं ,बल्कि ताकत बना लिया | 'सुख–दुःख,सफलता-असफलता,शान्ति-क्रोध ,और क्रिया -कर्म हमारे दृष्टिकोण पर ही निर्भर करता है |' जोस सिल्वा इस बात से सहमत होते हुए अपनी पस्तक '**यू दी हीलर** ' में लिखते है कि मन मस्तिष्क को चलाता है और मस्तिष्क शरीर को| इस तरह शरीर मन के आदेश का पालन करता हुआ काम करता है|

दबाव में व्यक्ति यदि सकारात्मक होकर काम करे ,तो वह अपना सर्वश्रेष्ठ प्रदर्शन करने में कामयाब होता हैं | दबाव के समय मौजूद समस्या पर ध्यान केंद्रित करने और बोझ महसूस करने के बजाए यदि यह सोचा जाए कि हम अत्यंत सौभाग्यशाली हैं ,जो एक कठिन चुनौती को पूरा करने के लिए तत्पर हैं तो हमारी बेहतरीन क्षमताएँ स्वयं जागृत हों उठती हैं | हमारा दिमाग जिस चीज पर अपना ध्यान केंद्रित करने लगता है ,वह हमें बढ़ती प्रतीत होती है | यदि हम अपनी समस्याओं के बारे में सोचेगें, तो वे और बड़ी होती महसूस होंगी | अगर अपनी शक्तियों पर ध्यान केंद्रित करेगें , तो वे भी बड़ी महसूस होंगी | इस बात को हमेशा ध्यान में रखना चाहिए कि 'जीतना एक आदत है ,पर अफसोस ! हारना भी आदत ही है |

क) दबाव में काम करने के नकारात्मक प्रभाव समझाइए | 2

ख) दबाव हमारी सफलता का कारण कब और कैसे बन सकता है ? 2

ग) दबाव में सकारात्क सोच क्या हो सकती है ? स्पष्ट कीजिए | 2

घ) काम करने की प्रक्रिया में मन ,मस्तिष्क और शरीर के संबंध को अपने शब्दों में समझाइए | 2

ड' (जीतना एक आदत है ,पर अफसोस! हारना भी आदत ही है |' इस कथन का आशय स्पष्ट कीजिए| 2

च) इस गद्यांश के केन्द्रीय भाव को लगभग 20 शब्दों में लिखिए | 2

छ)अपनी क्षमताओं को जगाने में या समस्याओं को बड़ा महसूस करने में हमारी सोच की क्या भूमिका है?1

ज) 'शारीरिक ' और 'कामयाबी ' प्रत्यय अलग कीजिए | 1

झ) 'असफलता ' और 'अत्यधिक ' शब्दों से उपसर्ग अलग कीजिए | 1

प्र० 2 निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए । 1x5 =5

फिर से नहीं आता समय ,जो एक बार चला गया ,
जग में कहो बाधा-रहित कब कौन काम हुआ भला ।
"बहती नदी सूखे अगर उस पार मैं इसके चलूँ -
इस सोच में बैठा पुलिन पर,पार जा सकता भला ?
किस रीति से क्या काम ,कब करना ,बना कर योजना ,
मन में लिए आशा प्रबल , दृढ़ जो वही बढ़ जाएगा ।
उसको मिलेगा तेज , बल अनुकूलता सब ओर से ,
वह कर्मयोगी ,वीर अनुपम साहसी सुख पाएगा ॥

यह वीर भोग्या, जो हृदयतल में बनी वसुधा सदा ,
करती रही आह्वान है ,युग वीर का ,पुरुषत्व का ।
कठिनाइयों में खोज कर पथ, ज्योति - पूरित जो करे,
विजयी वही होता धरणि-सुत वरण कर अमरत्व का॥

क) बहती नदी के उदाहरण से कवि क्या सिद्ध करना चाहता है ?

ख) जीवन में कैसे व्यक्ति प्रगति करते हैं ?

ग) वसुंधरा किसका आह्वान करती है और क्यों ?

घ) दृढ़ निश्चयी वीर को क्या-क्या लाभ प्राप्त होते हैं ?

ङ) 'धरणि-सुत ' किसे कहा गया है ? वह कैसे विजय प्राप्त करता है ?

खंड (ख)

प्र० 3 निम्नलिखित विषयों में किसी एक विषय पर अनुच्छेद लिखिए | 5

क) भारत युवाओं का देश

ख) एक सैनिक की आत्मकथा

ग) भ्रष्टाचार -एक भस्मासुर

घ) वही मनुष्य है जो मनुष्य के लिए मरे |

प्र० 4 सार्वजनिक स्थलों पर व्याप्त गंदगी की ओर ध्यान आकर्षित करते हुए तथा उसे स्वच्छ रखने के उपाए सुझाते हुए किसी दैनिक पत्र के संपादक को पत्र लिखिए | 5

अथवा

अस्पताल की कुव्यवस्था पर असंतोष प्रकट करते हुए चिकित्सा अधिकारी को पत्र लिखिए |

प्र० 5 "अभिव्यक्ति और माध्यम " पुस्तक के आधार पर संक्षेप में उत्तर दीजिए | 1x5 =5

क) प्रमुख जनसंचार माध्यम कौन से हैं ?

ख) खोजपरक पत्रकारिता किसे कहा जाता है ?

ग) जनसंचार माध्यमों का प्रयोग किस उद्देश्य से किया जाता है ?

घ) भारत में पहला छापाखाना कब और कहाँ खुला

ङ) इंटरनेट किस प्रकार का जनसंचार माध्यम है ?

प्र० 6 ' खान-पान और रहन –सहन की बदलती शैली ' अथवा 'गाँवों में गंदगी की समस्या ' विषय पर एक आलेख लिखिए | 5

प्र० 7 नौकरी पेशा नारियों की समस्याएं अथवा 'महानगरों में बढ़ते प्रदूषण की समस्या' विषय पर एक फीचर लिखिए | 5

खंड (ग)

प्र० 8 निम्नलिखित पद्यांश से संबंधित प्रश्नों के उत्तर लिखिए | 2X4=8

छोटा मेरा खेत चौकोना कागज का एक पन्ना ,
कोई अंधड़ कहीं से आया क्षण का बीज वहाँ बोया गया |
कल्पना के रसायनों को पी बीज गल गया नि:शेष ;
शब्द के अंकुर फूटे ,पल्लव पुष्पों से नमित हुआ विशेष !

क)खेत की तुलना कागज के पन्नों से क्यों की गई है ?

ख)काव्य पंक्तियों के आधार पर किसी कवि की रचना प्रक्रियाको क्रम से लिखिए |

ग)रचना में विचारों के अंधड़ की क्या भूमिका है ? स्पष्ट कीजिए |

घ) कवि और कविता का नाम लिखिए |

अथवा

अटटालिका नहीं है रे
आतंक -भवन
सदा पंक पर ही होता
जल- विप्लव- प्लावन .
क्षुद्र प्रफुल्ल जलज से
सदा छलकता नीर .
रोग -शोक में भी हँसता है
शैशव का सुकुमार शरीर |

क) कवि आतंक भवन किसे मानता है और क्यों ?

ख) 'पंक ' और 'जलज ' का प्रतीकार्थ क्या है और क्यों

ग) भाव स्पष्ट कीजिए –

रोग -शोक में भी हँसता है
शैशव का सुकुमार शरीर

घ) 'जल- विप्लव- प्लावन .' से क्या अभिप्राय है ?

प्र० 9 निम्नलिखित पद्यांश से संबंधित प्रश्नों के उत्तर लिखिए | 2X3=6

सारी मुश्किलों को धैर्य से समझे बिना
मैं पेंज को खोलने के बजाए
उसे बेतरह कसता चला जा रहा था
क्यों कि इस करतब पर मुझ
साफ सुनाई दे रही थी
तमाशबीनों की शाबाशी और वाह वाह ।

क) तमाशबीन वाह वाह किसलिए कर रहे थे ?

ख) इस काव्यांश का मुख्य संदेश स्पष्ट कीजिए |

ग) उपर्युक्त पद्यांश के काव्य सौंदर्य पर प्रकाश डालिए |

अथवा

प्रभु प्रलाप सुनि कान बिकल भए बानर निकर,
आइ गयउ हनुमान | जिमि करुना मंह बीर रस,

क) इस काव्यांश के छंद और उसकी भाषा पर टिप्पणी कीजिए |

ख) अनुप्रास अलंकार के दो उदाहरण छाँट कर लिखिए |

ग) हनुमान के आगमन को 'करुण रस में वीर रस का आगमन 'क्यों कहा गया है ?

प्र० 10 निम्नलिखित प्रश्नों में से किन्हीं दो प्रश्नों के उत्तर लिखिए -: 3X2= 6

क)'सहर्ष स्वीकारा है ' ' कविता किसको और क्यों स्वीकारने की प्रेरणा देती है ?

ख)'बगुलों के पंख ' कविता के सौंदर्य पर डालिए|

ग) फिराक की गजल में प्रकृति को किस तरह चित्रित किया गया है ?

प्र० 11 निम्नलिखित गद्यांश को पढ़ कर पूछे गए प्रश्नों से उत्तर लिखिए | 2X4=8

जाति -प्रथा को यदि श्रम विभाजन मान लिया जाए ,तो यह स्वाभाविक विभाजन नहीं है ,क्योंकि यह मनुष्य की रूचि पर आधारित नहीं है|कुशल व्यक्ति या सक्षम श्रमिक समाज का निर्माण करने के लिए यह आवश्यक है कि हम व्यक्तियों की क्षमता इस सीमा तक विकसित करें, जिससे वह् अपना पेशा या कार्य का चुनाव स्वयं कर सके |इस सिद्धांत के विपरीत जाति -प्रथा का दूषित सिद्धांत यह है कि इससे मनुष्य के प्रशिक्षण अथवा उसकी निजी क्षमता का विचार किए बिना ,दूसरे ही दृष्टिकोण जैसे –माता–पिता के सामाजिक स्तर के अनुसार ,पहलेसे ही अर्थात गर्भधारण के समय से ही मनुष्य का पेशा निर्धारित कर दिया जाता है |

क) जाति –प्रथा का दूषित सिद्धांत क्या है ?

ख) लेखक के अनुसार जाति-प्रथा को स्वाभाविक श्रम विभाजन क्यों नहीं माना जा सकता ?

ग) सक्षम श्रमिक समाज का निर्माण कैसे कर सकता है ?

घ) लेखक और पाठ का नाम लिखिए |

अथवा

शिरीष तरु सचमुच पक्के अवधूत की भाँति मेरे मन में ऐसी तरंगे जगा देता है जो ऊपर की ओर उठती रहती हैं इस चिलकती धूप में इतना सरस वह् कैसे बना रहता है ? क्या यह बाह्य परिवर्तन धूप, आँधी, लू अपने आप में सत्य नहीं है ? हमारे देश के ऊपर से जो यह मार काट-,अग्निदाह ,लूट-पाट , खूनखच्चर का - बवंडर बह गया है, उसके भीतर भी क्या स्थिर रहा जा सकता है ? शिरीष रह सका है | अपने देश का एक बूढा रह सका था | क्यों मेरा मन पूछता है कि ऐसा क्यों संभव हुआ? क्योंकि शिरीष भी अवधूत है | शिरीष वायुमंडल से रस खीच कर इतना कोमल और कठोर है| गाँधीजी भी वायुमंडल से रस खीच कर इतने कोमल और कठोर हो सकते थे | मैं जब–जब भी शिरीष की ओर देखता हूँ तब –तब हूक उठती है –हाय ,वह् अवधूत आज कहाँ है ?

क) शिरीष का वृक्ष लेखक के मन में कैसी प्रतिक्रिया जगाता है ?

ख) लेखक ने शिरीष को अवधूत क्यों कहा है ?

ग) गाँधी के लिए 'कोमल ' और 'कठोर ' दोनों विशेषणों का प्रयोग करना कैसे संगत है? शिरीष स्थिर कैसे रह सका ?

घ) लेखक और पाठ का नाम लिखिए

प्र० 12 निम्नलिखित प्रश्नों में से किन्हीं चार प्रश्नों के उत्तर लिखिए -: 3X 4 =12

क) लेखक ने चार्ली चैप्लिन का भारतीयकरण किसे कहा और क्यों ?

ख) पहलवान की ढोलक '' पाठ के आधार बताइए कि लुट्टन सिंह ढोल को अपना गुरु क्यों मानता था ?

ग) भक्तिन के ससुराल वालों ने उसके साथ कैसा व्यवहार किया और क्यों ?

घ) लेखक के अनुसार 'शिरीष के फूल 'पाठ का उद्देश्य बताइए |

ड.) लेखक के मत से 'दासता ' की व्यापक परिभाषा क्या है ?

च) सफिया ने सिख बीबी में अपनी माँ जैसी क्या समानता देखी ?

प्र० 13 'जूझ ' का कथा नायक विद्यार्थियों के लिए एक प्रेरणा स्रोत है –सिद्ध कीजिए | 5

अथवा

'ऐन की डायरी एक ऐतिहासिक दौर का जीवंत दस्तावेज है–इस पर अपने विचार प्रकट कीजिए |

प्र०14 क)मुअनजोदडों की सभ्यता पूर्ण विकसित मानव सभ्यता थी –कैसे ? 5

ख) "सिल्वर वैडिंग " कहानी के आधार पर यशोधर बाबू के व्यक्तित्व की विशेषताओं पर प्रकाश डालिए | 5

Atomic Energy Central School No.4, Rawatbhata

Confidence Test-I (2017-18)

M.M. 70 Class-XII, Physical Education Time: 3 Hours.

GENERAL INSTRUCTIONS:

1) The question paper consists of 26 questions.

2) All questions are compulsory.

3) Answer to question 1-11 carrying 1 mark should be in approximately 20- 30 words.

4) Answer to question 12-19 carrying 3 marks should be in approximately 80-100 words.

5) Answer to question 20-26 carrying 5 marks should be in approximately 150-200 words.

Q.1) What do mean by league tournament ? 1

Q.2) What is food intolerance? 1

Q.3)What is diabetes? 1

Q.4) Mention any 01 cause of OCD? 1

Q.5) Define motor development. 1

Q.6) Define functional disabilities. 1

Q7) What do understand by Anemia? 1

Q.8) What is Rockport 1 mile walk Test? 1

Q.9) Define First-Aid. 1

Q.10) What is aerodynamics? 1

Q.11) Define endurance. 1

Q.12) Describe the objectives of intramural tournaments. 3

Q.13) Group of young children were undergoing training for a main event.

Training was targeted to develop selected abilities and preparing for a competition. Some of team members tried to convince other fellow team members to use certain medicines which one boy did not agree. Other team members tried to convince him for the sake of the team but he firmly refused and convinced them that it is against the rules of the game.

(a)What value the boy has shown by refusing to use banned substances?

(b)What personality trait he has shown by refusing to his team members?1.5+1.5=3

Q.14) Explain pitfalls of dieting. 3

Q.15) Elaborate any 03 methods to prevent asthma. 3

Q.16) Explain the procedure of six minute walk test. 3

Q.17) Explain three gender differences in detail. 3

Q.18) Explain about the management of fracture. 3

Q.19) Describe the method of sit and reach test. 3

Q.20) Draw a fixture of 7 teams participating in the league tournament. 5

Q.21) Explain in detail the effects of diet on sports performance. 5

Q.22) Explain the causes of any 05 postural deformities in detail. 5

Q.23) How AAPHER youth fitness test is administered ? 5

Q.24)Elaborate the physiological factors determining endurance and strength . 5

Q.25) Describe the types of personality. 5

Q.26) Explain the impact of high altitude training. 5
