Atomic Energy Central School No. 4, Rawatbhata

Confidence Examination - 1 (2018- 19)

Maximum Marks: 100 Class-XII, English Time- 3 Hours

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)

Q1.Read the passage and on the basis of your understanding of the passage answer the questions given below: (20)

1. India has never subscribed to the doctrine of militarism and war in her history. Here war was never treated as an ideal. It was only tolerated as unavoidable and inevitable, and all attempts were made to check it and bring it under control. Inspite of the frequency of wars in ancient India, in spite of highly developed military organization, techniques of war and imperialism, and in spite of the open justification of war as national policy, the heart of India loved pacifisms as an ideal capable of realization. India's symbolic role was that of a peacemaker and it sincerely pinned its faith on the principle of 'Live and let live". At least philosophically, India's intelligence supported the cause of peace not only in national affairs but in international affairs also. All the great seers of the yore visualized the unity of life, permeating all beings, animate or inanimate, which ruled out killing and suicidal wars.
2. This doctrine of philosophical pacifisms practised by ancient *Aryans* is, no doubt, a question of controversial nature. Certainly, the great Indian teachers and *savants* stuck to this doctrine tenaciously and in their personal life they translated it into practice and preached it to masses and even to princes of military classes.
3. Another culture of those times, the existence of which has been proved by the excavations of *Mohan-jo-Daro,* also enunciated the doctrine of pacificism and friendship to all. Strangely enough, the Indus Valley civilization has revealed no fortification and very few weapons.
4. Ahimsa or the doctrine of non-violence in thought, speech and action assumed a gigantic importance in the Buddhist and Jain period. By a constant practice of this virtue, man becomes unassailable by even wild beasts, who forgot their ferocity the moment they entered the circumference of his magnetic influence. The monks and nuns of these churches were apostles of peace, who reached every nook and corner of the world and delivered the message of love to war-weary humanity. The greatest votary was the royal monk *Ashoka*, who in reality was responsible for transforming Ahimsa as an act of personal virtue, to Ahimsa as an act of national virtue.
5. Many a historian recounting the causes of the downfall of the *Mauryas,* hold the pacific policy of *Ashoka* which had eschewed the aggressive militarism of his predecessors, responsible for an early decay of the military strength of the state and its consequent disintegration, leading to the rise of *Sungas, Kanvas* and

Andhras. But, in reality the fault lies with the weak successors of *Ashoka*, who could not wield the weapon of non-violence with a skill and efficiency which required the strength of a spiritual giant like *Ashoka*. They failed due to their subjective weakness: Pacifism itself was no cause of their failure.

6. Besides the foregoing philosophical and religious school of thought, even many political authorities gave their unqualified support to the cause of pacifisms. They recognized the right of rivals to exist, not mainly as enemies, but as collaborators in the building of a civilization operation. Thus, for centuries, in the pre-*Mauryan* India, scores of small independent republics existed and flourished without coming in clash with each other.
7. With regard to *Kautilya*, the much maligned militarist and the so called Machiavelli of India, He thinks that the object of diplomacy is to avoid war.
8. The Mahabharata observes in the connection, "A wise man should be content with what can be obtained by the expedients of conciliation, gift and dissention." It denounces the warring world of men by comparing it to a dog-kennel. "First there comes the wagging of tails, then turning of one round to other, then the show of teeth, then the roaring and then comes the commencement of the fights. It is the same with men; there is no difference whatever." *Yajnavalkya* adds: "War is the last expedient to be used when all others have failed." Likewise, *Sri Krishna* whose *Bhagwad-Gita* has been styled by some as a song of the battle, should not be considered out and out militarist. When all the three expedients were exhausted, then alone the fourth was resorted to.
9. All possible avenues of peace such as negotiation, conciliation through conference, meditation and so on, were explored before the war was resorted to. This proves that the heart of ancient India was sound and it longed for peace, although war also was not treated as an anathema, which was to be avoided as far as possible. (Words– 737)

(*Extract from 'Culture India-Pacifism has been the Ideal' by Sri Indra)*

1.1 Answer each of the questions given below by choosing the most appropriate option: (1X5=5)

(i) The heart of India loved ____

a) a highly developed military organization b)techniques of wars and imperialism c)loans d)pacifism

(ii) Principle of 'Live and let live' means

a) Imperialism b)militarism c)frequency of wars among nations d)role of peace makers

(iii) Aryans preached and practised this to the masses

a) non-violence b)freedom of speech and action c)philosophical pacifisms d)practice of military organization

(iv) Mahabharata compares the warring world with

a) wise men b)dog kennel c)song of the battle d)militarist

(v) Unearthing *Mohan-jo–Daro* reinforced the following of Pacifism

a) there was no fortification and very few weapons
b) they delivered the message of love
c) they were apostles of peace
d) thinks that the object of diplomacy is to avoid war

1.2 Answer the following questions briefly: (1X6=6)

(i) How was war treated in India?

(ii) Describe India's preparedness for war in spite of their belief in Pacifism.

(iii) How did the Aryans practice the Doctrine of Pacifism?

(iv) What is Ahimsa?

(v) What is the meaning of co-existence with rivals?

(vi) Why should Bhagvad-Gita not be considered as "A song of the battle"?

1.3 Answer any three of the following questions in 25-30 words: (2X3=6)

(i) What kind of unity did all the seers visualize?

(ii) By some, Ashoka was considered as the cause of the downfall of the Mauryas. Do you agree? Give reasons for your answer.

(iii) Which options were explored by Sri Krishna before resorting to war?

(iv) Throw some light on the thinking of Kautilya regarding war.

1.4 Pick out the words/phrases from the passage which are similar in meaning to the following: (1X3=3)

(i) express in definite and clear terms (para 3)

(ii) defensive wall (para 3)

(iii) the beginning (para 8)

Q2. Read the passage and answer the questions given below: (10)

1. There is a clear dichotomy between *Jayashankar Prasad's* daily life and the one that found expression in his literature. In his literary formulations, *Prasad* advocated an escape from- personality ideal and categorically stated: "An artist's art, and not his person, is the touchstone to assess his work . . . it is only after losing his personality that he emerges in his art as an artist".
2. In *Prasad*'s works – his poems, short stories, novels, dramas etc. – what emerges is life as shaped in the writer's inner self by his emotions, fancies, dreams, reveries . . . His writings are a record not of outer reality, but of the artist's inner world. As such, of a proper appreciation and understanding of his works more emphasis needs to be placed on the working of his mind, than the events of his day-to-day life.
3. Prasad was born in a renowned family of *Varanasi*. His grand-father *Shiv Ratan Sahu*, a dealer in high quality perfumed tobacco (snuff). Besides being an astute businessman, he was endowed with a marked cultural taste. His home was the meeting place of the local poets, singers, artists, scholars and men of religion. Prasad's father *Devi Prasad Sahu* carried forward this high tradition of family. *Prasad*, therefore, had a chance to study the various phases of human nature in the light of the business traditions, artistic taste and religious background of his family.
4. When the business had somewhat recovered, *Prasad* planned the publication of a literary journal. Prasad started the "Indu". The inaugural number appeared in July 1909. By this time Prasad's notions of literature had crystalized into a credo. In the first issue of *Indu*, he proclaimed, Literature has no fixed aim; it is not slave to rules; it is free and all-embracing genius, gives birth to genuine literature which is subservient to none. Whatever in the world is true and beautiful is its subject matter. By the dealing with the True and Beautiful it establishes the one and affects the full flowering of the others. Its force can be measured by the

degree of pleasure it gives to the readers' mind as also by criticism which is free of all prejudice". The words sound like the manifesto of romanticism in literature.

5. Even while recognizing the social relevance of literature, *Prasad* insisted, "The poet is a creator . . . he is not conditioned by his milieu; rather it is he who moulds it and gives it a new shape; he conjures up a new world of beauty where the reader for the time being, becomes oblivious of the outer world and passes his time in an eternal spring garden where golden lotuses blossom and the air is thick and pollen". Thus, the chief aim of literature according to Prasad is to give joy to the reader and to create a state of bliss in him. Later under the impact of *Shaivadvaitism*, this faith of *Prasad* got further strengthened.

(word length- 490)

(Extract from 'Jayashankar Prasad- His mind and Art' by Dr. Nagendra)

2.1 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 four) and a format you consider suitable. Also supply an appropriate title to it. (5)

2.2 Write a summary of the passage in about 100 words. (5)

SECTION: B (ADVANCED WRITING SKILLS)

Q3. You are Simar / Smriti of Lotus International School, Jodhpur. Your school is organizing a workshop on 'Prevention of Drug Abuse' in the coming week. Prepare a poster with complete information for the students of class X-XII. (4)

OR

You are Simar / Smriti of Lotus International School, Jodhpur.Your school has decided to contribute in controlling traffic near your school and requires the names of volunteers from IX to XII. Write a notice to be displayed on the notice board. (50 words)

Q4. Public demonstration causes a lot of disturbance in daily routine of common man. You almost missed your important entrance examination as people blocked the highway. As Tarun / Taruna, a student aspiring to be a doctor, write a letter to the Editor of The Times of India highlighting the need to discourage such demonstrations and disturbance by public on highways which cause a great loss of time and opportunity for many. (100-125 words) (6)

OR

You are Tarun / Taruna who bought a new Luminous Inverter for your home from R.K. Electronics, Noida but found many functional problems as the charging is not done properly and battery water is getting leaked. Write a letter of complaint to the proprietor to take care of the same. (100-125 words)

Q5. You are Mukul / Mahima of Alps Public School, Kanpur. Your school has organized a debate on 'Does Social Media Socialise Us' and you will be participating from your school. Prepare your views against or in favour of the motion. (150-200 words) (10)

OR

As Mukul / Mahima of Alps Public School, Kanpur write a speech to be delivered in school assembly highlighting the importance of cleanliness suggesting that the state of cleanliness reflects the character of its citizens. (150-200 words)

Q6. By 2050, India will be amongst the countries which will face acute water shortage. You are highly alarmed and terrified of the future world without water. So write an article on 'Save water- are we doing enough?' for the local daily in 150-200 words. (10)

OR

You are Karan / Kirti of L.M. Memorial Public School, Dwarka. Your school has adopted a village as a social responsibility. Students are being taken to teach the children of that village on a regular basis. Write a report, for your school magazine, on the various other programmes organized there in 150-200 words.

SECTION: C

(LITERATURE: TEXT BOOKS and LONG READING TEXT)

Q7.Read the following extract and answer the following questions briefly:

What I want should not be confused
with total inactivity.
Life is what it is about;
I want no truck with death.

(i) Name the poem and the poet of the above stanza.
(ii) What does the poet mean by 'inactivity'?
(iii) Explain what life is all about according to the poet?
(iv) What is the ultimate expectation of the poet from all human beings? (1X4=4)

OR

When aunt is dead, her terrified hands will lie
Still ringed with ordeals she was mastered by.
The tigers in the panel that she made
Will go on prancing, proud and unafraid.

(i) Name the poem and the poet of the above stanza.
(ii) What lies in store for the Aunt?
(iii) Explain 'ringed with ordeals'.
(iv) Identify and name the poetic device used in the last line of the above stanza.

Q8.Answer any four of the following questions in 30-40 words: (3X4=12)

(i) "We have all a great deal to reproach ourselves with", said M.Hamel. Refer to the context and explain what he wanted to convey to his students.
(ii) Why was Edla happy to see the gift left by the peddler?

(iii) When Gandhi got the whole hearted support of the lawyers, he said, 'The battle of Champaran is won'. What was the essence behind his statement?

(iv) Did the prophecy of the astrologer come true at the end of the story? How?

(v) What were the indignities that Zitkala-Sa had to suffer ?

(vi) What story did Jo want to hear the next day and why? What was father's reaction to it?

Q9. Answer any one of the following questions in 120-125 words: (6)

(i) Mukesh is not like the others. 'His sdreams loom like a mirage amidst the dust of streets that fill his town Firozabad'. Justify the statement in the light of contrast in the mindsets of Mukesh and the people of Firozabad.

(ii) 'Unrealistic dreams often lead to a great deal of unhappiness'. Justify the statement on the basis of the story, 'Going Places'.

(iii) 'The childhood experience of terror of Douglas made him stronger and more determined'. Elucidate the above statement supporting it with evidences from the text.

Q10. Answer any one of the following questions in about 120-150 words: (6)

(i) The servants of Sadao and Hana reflect a particular mindset of the general public in society towards the thinking and broad minded human beings. Elaborate it with the help of the story, 'The Enemy'.

(ii) Optimism in one's attitude helps deal with all the challenges in life. Prove the statement by referring to the character, Mr. Lamb from the chapter, 'On the Face of It'.

(iii) Give a detailed account of the preparations made by the Governor for Evans to write his examination.

Q11. Answer any one the following questions in about 120-150 words: (6)

(i) 'I do not agree to this. Why dream of playing a game against the race. How can you hope to gain happiness? Do not be a lone wolf. Publish your results, take the world-take the nation at least-into your confidence' said Dr. Kemp. These words sum up, to a large extent, the downfall of a genius like Griffin. Elucidate from the novel, 'The Invisible Man'.

(ii) Mr. Hall is a carefree man as he has a typical working life-partner in Mrs. Hall. Such persons are found in every society. Give a peep into both of their characters. (The Invisible Man)

(iii) How are the weavers treated differently from the farmers by the locals of Raveloe? (Silas Marner)

(iv) Describe in your own words, the village of Raveloe. List some of the differences between Raveloe and Lanter Yard.

Q12. Answer any one of the following questions in about 120-150 words: (6)

(i) The unveiling of the stranger was as unplanned and sudden for himself as for the people of Iping. Explain the reason, incident and consequence of his unveiling.

(ii) Describe and analyse the contribution of rustic characters in the development of plot of the novel, 'The Invisible Man'.

(iii) What is the significance of Gold in the novel, 'Silas Marner'.

(iv) In the war between love and luxury, love has priority. Justify it on the basis of 'Silas Marner'.

Atomic Energy Central School 4 Rawatbhata

Confidence Examination –I (2018 - 19)

M.M : 70 | Class XII, Physics | Time: 3:00 Hours

General Instructions:

1. All questions are compulsory. There are 27 questions in all.

2. This question paper has four sections: section A, Section B, Section C and Section D.

3. Section A contains five questions of one mark each, section B contains seven questions of two marks each, Section C contains twelve questions of three marks each, and Section D contains three questions of five marks each.

4. There is no overall choice. However, internal choices have been provided in two questions of one mark, two questions of two marks, four questions of three marks and three questions of five marks weightage. You have to attempt only one of the choices in such questions.

Section-A

1. Draw a graph showing the intensity distribution of fringes due to diffraction at single slit.

2. What is the net force on an electric dipole placed in a uniform electric field?
3. If the earth did not have an atmosphere, would its average surface temperature be higher or lower than what it is now?

OR

Name the EM waves used for studying crystal structure of solids. What is its frequency range?

4. What will be the effect on capacity of a parallel plate condenser when area of each plate is doubled and distance between them is also doubled?

5. The hysteresis loop of a soft iron piece has a much smaller area than that of a carbon steel piece. If the material is to go through repeated cycles of magnetization, which piece will dissipate greater heat energy?

OR

If the number of turns of a solenoid is doubled, keeping the other factors cons

how does the self-Inductance of the solenoid change?

Section-B

6. A potential of $E = 50\sin(2\pi t + \frac{\pi}{4})$ is applied across a resistor of10 Ω resistance. Find
   a. rms value of potential
   b. Frequency of a.c.
   c. initial phase
   d. rms value of current

OR

What do you mean by power factor? On what factors does it depend?

7. Six lead acid type of secondary cells each of emf 2.0 V and internal resistance 0.015Ω are joined in series to provide a supply to a resistance of 8.5Ω. What are the current drawn from the supply and its terminal voltage?

OR

A steady current flows in a metallic conductor of non-uniform cross-section. Which of these quantities is constant along the conductor: current, current density, electric field, drift speed?

8. The motion of a copper plate is damped when it is allowed to oscillate between the pole pieces of a magnet. State the cause of this damping.

9. How are electromagnetic waves produced? What is the source of energy of these waves? Write the relation between the velocity of propagation and the magnitudes of electric and magnetic fields.

10. State the applications of Ultraviolet radiations.
11. A converging lens of refractive index 1.5 is kept in a liquid medium having same refractive index. What would be the focal length of the lens in this medium?
12. An electron is moving along +ve x-axis in the presence of uniform magnetic field along +ve y-axis. What is the direction of force acting on it?

Section-C

13. A choke coil in series with a lamp is connected to a dc line. The lamp is seen to shinebrightly. Will insertion of an iron core in the choke causes any change in the lamp'sbrightness? Predict the corresponding observations if the connection is to an a.c. source.

14. Define modulation index. Why is its value 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.

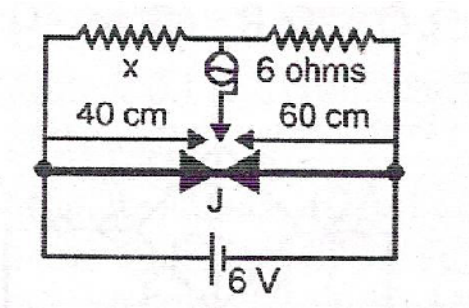
15. Draw the block diagram of a communication system. Why is ground wave transmission of signals restricted to a frequency of 1500 kHz.

16. Which state of the triply ionized Be+++ has the same orbital radius as that of theground state of hydrogen? Compare the energies of two states.

OR

A hydrogen atom initially in the ground level absorbs a photon, which excites it to the n = 4 level. Determine the wavelength and frequency of photon.

17. In the following circuit, a metre bridge is shown in its balanced state. The metre bridge wire has a resistance of 1 Ω cm^{-1}.calculate the value of the unknown resistance X and the current drawn from the battery of negligible internal resistance.



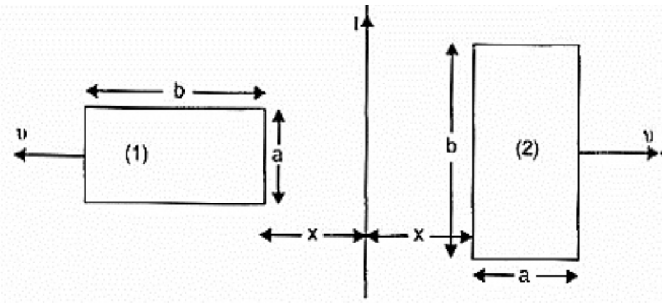
18. (a) With the help of a ray diagram, show how a concave mirror is used to obtain an erect and magnified image of an object.

(b) Using the above ray diagram, obtain the mirror formula and the expression for linear magnification.

OR

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

19. The figure shows two identical rectangular loops (1) and (2) placed on a table along with a straight long current carrying conductor between them.



a. What will be the directions of the induced current in the loops when they arepulled away from the conductor with same velocity v?

b. Will the emf induced in the two loops be equal?

OR

A small flat search coil of area 2 cm^2 with 25 closely wound turns, is positionednormal to the field direction, and then quickly rotated by 90°. The total charge flownin the coil is 7.5 mC. The resistance of the rod is 0.50Ω. Estimate the field strength of magnetic field.

20. Explain with the help of suitable diagram, the two processes which occur during the formations of a p-n junction diode. Hence define the terms (i) depletion region and (ii) potential barrier.

21. Draw energy band diagrams for (i) an intrinsic semiconductor, (ii) p-type semiconductor. Draw symbolic representation of a zener diode. Draw its V-I characteristics and explain, with the help of a circuit diagram, its use as a voltage regulator.

22. A parallel plate capacitor with air as dielectric is charged by ad.c.source to a potentialV. Without disconnecting the capacitor from the source, air is replaced by anotherdielectric medium of dielectric constant K. State with reason, how does

a. potential difference b. electric field between the plates

c. capacity d.charge and energy stored in the capacitor change.

23. Define current sensitivity and voltage sensitivity of a galvanometer. Increasing thecurrent sensitivity may not necessarily increase the voltage sensitivity ofgalvanometer. Justify

OR

When a dielectric is inserted between the plates of a charged parallel plate capacitor,fully, occupying the intervening region, how does the polarization of the dielectricmedium affect the net electric field? For linear dielectrics, show that the introductionof a dielectric increases its capacitance by a factor k, characteristic of the dielectric.

24. Two radioactive nuclei X and Y initially contain equal number of atoms. The half –life is 1 hour and 2 hours respectively. Calculate the ratio of their rates of disintegrationafter two hours.

Section-D

25.

a) Using Gauss's law, derive an expression for the electric field intensity at any pointoutside a uniformly charged thin spherical shell of radius R and charge density σ c/m^2.

b) Draw the field lines when the charge density of the sphere is:
(i) positive, (ii) negative.

c) A uniformly charged conducting sphere of 2.5 m indiameter has a surface charge density of 100μc/m^2.Calculate the (i) Charge on the sphere (ii) Total electric flux passing through thesphere.

OR

a) Define the term drift velocity

b) On the basis of the electron drift, derive an expression for resistivity of a conductor in terms of density of free electrons and relaxation time. On what factors does resistivity of a conductor depends?

c) Why alloys like Constantine and Magnanin are used for making standard resistors.

26.

a) What are coherent sources of light? Two slits in Young's double slit experiment are illuminated by two different sodium lamps emitting light of the same wavelength. Why is no interference pattern observed?

b) Obtain the condition for getting dark and bright fringes in Young's experiment. Hence write the expression for the fringe width.

c) If s is the size of the source and its distance from the plane of the two slits, what should be the criteria for the interference fringes to be seen?

OR

a. With the help of a labelled ray diagram, show the image formation by a compound microscope. Derive an expression for its magnifying power.

b. How does the resolving power of a compound microscope get affected on

(i) Decreasing the diameter of its objective? (ii) Increasing the focal length of its objective?

27. a) Draw a plot showing the variation of binding energy per nucleon versus the mass number *A*. Explain with the help of this plot the release of energy in the processes of nuclear fission and fusion.

b) Draw a plot of potential energy of a pair of nucleons as a function of their separations. Mark the regions where the nuclear force is (i) attractive and (ii) repulsive. Write any two characteristic features of nuclear forces.

OR

What will happen to (i) kinetic energy of photo electrons, and (ii) photocurrent, if the light is changed from ultraviolet to X-rays in a photo cell experiment? Intensity of the beam is the same in both the cases.

Define the term work function of a metal. The threshold frequency of a metal is f0 . When the light of frequency 2 f0 is incident on the metal plate, the maximum velocity of electrons emitted is v1 .When the frequency of the incident radiation is increased to 5 f0 , the maximum velocity of electrons emitted is v2. Find the ratio of v1 to v2 .

Atomic Energy Central School No.4 Rawatbhata

Confidence Examination-I (2018-19)

M.M.: 100 Class XII, Chemistry Time: 3:00 Hours

General Instructions:

(i) *All questions are compulsory.118.*

(ii) *Questions number 1 to 5 are very short-answer questions and carry 1 mark each.*

(iii) *Questions number 6 to 12 are short-answer questions and carry 2 marks each.*

(iv) *Questions number 13 to 24 are also short-answer questions and carry 3 marks each.*

(v) *Questions number 25 to 27 are long-answer questions andcarry 5 marks each.*

(vi) *Use Log Tables, if necessary. Use of calculators is not.*

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1. Why are solids containing F-centres paramagnetic? 1

2. Write the formulae of two oxo acids of chlorine. 1

3. On heating zinc granules with concentrated HNO_3, a brown gas is evolved which undergoes dimerization. Identify the gas. 1

4. Write the IUPAC name of $[[Co\text{-}(NH_3)_5\ NO_2]\ (NO_3)]$ 1

5. Arrange the following in increasing order of basic strength : Aniline, p-methylaniline, p-nitroaniline. 1

6. Why does a solution containing non-volatile solute have higher boiling point than pure solvent? Why is the elevation of boiling point a colligative property? 2

7. For a reaction A + B ® P, the rate is given by 2

   Rate = $k\ [A]^2\ [B]$

   (a) How is the rate of reaction affected, if the concentration of A is doubled?

   (b) What is the overall order of reaction, if B is present in large excess?

8. Write the balanced chemical equations for the following reactions: 2

   (a) $XeF_4 + SbF_5 \rightarrow$

   (b) $XeF_2 + H_2O\ (l) \rightarrow$

OR

Give reasons for the following :

(a) Xenon does not form fluorides such as XeF_3 and XeF_5.

(b) Out of noble gases, only Xenon is known to form real chemical compounds.17.

9. (a) Name the oil soluble vitamin which is a powerful antioxidant. 2

(b) Name the product of hydrolysis of sucrose.

10. (a) What change occurs in the nature of egg protein on boiling ? 2

(b) What is the difference between the structure of starch and cellulose?

11. Differentiate : (i) Lyophilic sol and lyophobic sol

(ii) Homogeneous catalyst and heterogeneous catalyst. 2

12. Define : (i) Emulsion

(ii) Peptisation. 2

13. Determine the type of cubic lattice to which iron crystal belongs if its unit cell has an edge length of 300 pm and density of iron is 7.2 g cm^{-3}. 3

[Atomic mass of Fe = 56 g mol^{-1} N_A = 6.02 10^{23} mol^{-1}

14. 3.9 g benzoic acid dissolved in 49 g of water shows a depression in freezing point of 1.62 K. Calculate the van't Hoff factor and predict the nature of solute (associated/dissociated). 3

[Given : Molar mass of Benzoic Acid = 122 g mol^{-1}, K_f (H_2O) = 1.86 K kg mol^{-1}]

15. For a first order reaction, show that the time required for 99% completion is double of the time required for the completion of 90% reaction. 3

OR

The rate constant of a first order reaction increases from 4 10^{-2} to 24 10^{-2}, when the temperature changes from 300 K to 350 K. Calculate the energy of activation (E_a).

[Given : log 2 = 0.3010, log 3 = 0.4771, log 4 = 0.6021,

log 6 = 0.7782; R = 8.314 J K^{-1} mol^{-1}]

16. (a) Indicate the principle behind the method for the refining of zinc. 3

(b) Account for the following :

(i) It is advantageous to roast sulphide ore to oxide before reduction.

(ii) Zinc oxide can be reduced to metal by heating with carbon but not Cr_2O_3.

17. Account for the following: 3

(a) Interhalogen compounds are more reactive than pure halogens.

(b) Nitrogen is less reactive at room temperature.

(c) Reducing character increases from NH_3 to BiH_3.

18. For the complex $[CoF_6]^{3-}$ write the hybridization type, magnetic character and spin nature of the complex. 3

(Atomic number of Co = 27)

19. How do you convert the following? 3

(a) Propene to propan-2-ol

(b) Bromobenzene to 2-bromoacetophenone

(c) Alkyl halides though polar, are immiscible with water.Why?

20. Write the reactions involved in the following: 3

(a) Aldol condensation

(b) Cannizzaro's reaction1

(c) Rosenmund reduction

21. Give reasons for the following: 3

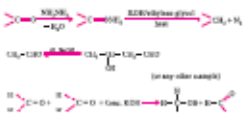
(a) Aldehydes and Ketones have lower boiling points than corresponding alcohols.

(b) Chloroacetic acid is stronger than acetic acid.

(c) Formaldehyde does not take part in aldol condensation.

22. An aromatic compound A on tratment with ammonia followed by heating forms compound B which on heating with Br_2 and KOH forms compound C having molecular formula C_6H_7N. Give the structures of A, B and C. 3

23. (a) Identify the monomers in the following polymeric structure: 3



(b) Which one of the following is an Elastomer?

Urea-formaldehyde, Resin, Buna-S, PVC

(b) On the basis of forces between their molecules in apolymer, to which class does polyester belong?

24. Give one example for each of the following: 3

(a) An artificial sweetener whose use is limited to cold drinks.

(b) A non-ionic detergent.

(c) A pain reliever used for relief from severe pain like post-operative pain.

25. Calculate the emf and ΔG for the following cell at 298 K : 5

$Mg\ (s)\ |\ Mg^{2+}\ (0.01\ M)\ ||\ Ag+\ (0.0001\ M)\ |\ Ag\ (s)$

[Given: $E^0_{Mg2+/Mg} = -2.34\ V$; $E^0_{Ag^+/Ag} = 0.80\ V$]

OR

(a) Give reasons for the following:

(i) Iron does not rust even if zinc coating is broken in agalvanized pipe.

(ii) Copper sulphate solution cannot be stored in zinc container.

(b) The molar conductivity of 0.025 mol L^{-1} methanoic acid is 46.1 S cm^2 mol^{-1}. Calculate its degree of dissociation and dissociation constant.

[Gvien : $\lambda^o_{H+} = 349.6\ S\ cm^2\ mol^{-1}$ and

$\lambda^o_{HCOO-} = 54.6\ S\ cm^2\ mol^{-1}$]

26. (a) Why do actinoids show a wide range of oxidation states? Write one similarity between the chemistry of lanthanoids and actinoids.

(b) Second I.E. of chromium and copper are exceptionally higher than that of their neighbouring elements. Explain.

(c) Zinc has lowest enthalpy of atomization in 3d-series. Why? 5

OR

(a) Give reasons for the following:

(i) Transition metals are paramagnetic.

(ii) Transition metals show variable oxidation states.

(iii) Zr and Hfhave nearly similar atomic radii.

(b) Write the preparation of $KMnO_4$ from pyrolusite ore(MnO_2).

27. (a) How do you convert the following? 5

(i) Phenol to Benzene

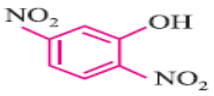
(ii) Ethanol to Ethene

(b) Give the chemical tests to distinguish between the following pairs of compounds:

(i) Ethanol and Phenol

(ii) Butan-2-ol and 2- methylpropan-2-ol

(c) Write the IUPAC name of



OR

(a) Write the mechanism for the preparation of alcohols from alkenes (acid catalyzed hydration).

(b) Gvie reasons for the following:

(i) Phenols do not undergo sudergo substitution of the –OH group like alcohols.

(ii) p-nitrophenol is more acidic than p-methylphenol.

Atomic Energy Central School No.4 Rawatbhata

Confidence Examination-I (2018-19)

M.M.: 100 Class XII, Mathematics Time: 3:00 Hours

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. A is a square matrix of order 3 with $|A| = 4$. Find the value of $|A.(\text{adj } A)|$.

2. The radius of a circle increases at a rate of 3 cm/sec, What is the rate of increase of its area at the instant when radius of circle is 10 cm.

3. Evaluate $\int_{-1}^{1} (x)|x|dx$

4. Write the equation of a line passing through (1, 2, 3) and perpendicular to plane $x - 3y + z = 9$.

SECTION – B

5. If $A = \begin{bmatrix} 2 & 3 \\ -1 & 2 \end{bmatrix}$, show that $A^2 - 4A + 7I = 0$

6. Examine the continuity of the function $f(x) = x - [x]$ at $x = 2$ [[x] = greatest integer $\leq x$]

7. Differentiate $e^{\sin^2 x}$ w.r.t. $\cos^2 x$

8. Using differentials find approximate value of $(8.1)^{\frac{1}{3}}$.

9. Evaluate $\int \frac{1}{x^3 + x} dx$

10. Form the differential equation of family of circles $x^2 + (y - a)^2 = a^2$

11. Find a vector of magnitude 6 units which is perpendicular to both $\vec{a} = \hat{i} + \hat{j} - \hat{k}$ and $\vec{b} = \hat{j} + 5\hat{k}$.

12. Two balls are drawn at random from a bag containing 6 red and 4 green balls, find the probability that both balls are of same colour.

SECTION – C

13. A trust invested some money in two type of bonds. The first bond pays 10% interest and second bond pays 12% interest. The trust received Rs 2800 as interest. However, if trust had inter changed money in bonds, they would have got Rs 100 less as interest using matrix method, find the amount invested in each bond by the trust. Interest received on this amount will be given to Helpage India as donation. Which value is reflected in the question.

14. If $x = a\cos\theta + b\sin\theta$, $y = a\sin\theta - b\cos\theta$, show that $y^2\frac{d^2y}{dx^2} - x\frac{dy}{dx} + y = 0$

15. Find the intervals in which the function f(x) = sin x + cos x, $0 < x < 2\pi$ is strictly increasing or strictly decreasing.

16. $\hat{a}, \hat{b}$ and $\hat{c}$ are unit vectors such that $\hat{a}.\vec{b} = \hat{a}.\hat{c} = 0$ and the angle between $\hat{b}$ and $\vec{c}$ is $\frac{\pi}{6}$ prove that $\hat{a} = \pm 2(\hat{b}\times\hat{c})$

OR

$\vec{a}, \vec{b}$ and $\vec{c}$ are vectors such that $\vec{a}.\vec{b} = \vec{a}.\vec{c}, \vec{a}\times\vec{b} = \vec{a}\times\vec{c}$ and $\vec{a} \neq \vec{o}$ show that $\vec{b} = \vec{c}$

17. Evaluate: $\int_o^{\pi} \frac{x\sin x}{1+3\cos^2 x}dx$

OR

Evaluate: $\int_{-\pi/2}^{\pi/2} \frac{\cos^2 x}{1+e^x}dx$

18. Find : $\int\left(\sqrt{\tan x} + \sqrt{\cot x}\right)dx$

19. Show that $\frac{x-1}{3} = \frac{y-1}{-1} = \frac{z+1}{o}$ and $\frac{x-4}{2} = \frac{y}{0} = \frac{z+1}{3}$ intersect. Find their point of intersection.

OR

Find the coordinates foot of perpendicular drawn from point (2, 3, 4) on the plane $\vec{r}.\left(2\hat{i} + \hat{j} + 3\hat{k}\right) = 26$

20. Five bad oranges are accidently mixed with 20 good ones. If four oranges are draw one by one successively with replacement, then find the probability distribution of getting bad oranges.

21. Two cards from a pack of 52 cords are lost from the remaining 50 cards, one card is drawn. If the drawn card is a spade, what the probability that lost cards were both spades.

22. Solve the differential equation. $\frac{xdy}{dx} + y - x + xy\cot x = 0, x \neq 0$

23. If $(\tan^{-1} x)^2 + (\cot^{-1} x)^2 = \frac{5\pi^2}{8}$, then find x

OR

If $y = \cot^{-1}\left(\sqrt{\cos x}\right) - \tan^{-1}\left(\sqrt{\cos x}\right)$ then prove that $\sin y = \tan^2\left(\frac{x}{2}\right)$.

Section – D

24. Consider a binary operations * on Q, defined as a * b = a + b – ab.

(i) Is * commutative?

(ii) Is * associative?

(iii) Find the identity element of * in Q.

(iv) Find the inverse of all $a \in Q$, for which it exists.

25. Using properties of determinants, prove that

$$\begin{vmatrix} -bc & b^2+bc & c^2+bc \\ a^2+ac & -ac & c^2+ac \\ a^2+ab & b^2+ab & -ab \end{vmatrix} = (ab+bc+ca)^3$$

26. Show that height of cylinder of greatest volume that can be inscribed in a cone of height h, is $\frac{h}{3}$.

OR

Find the area of greatest rectangle that can be inscribed in an ellipse $\frac{x^2}{a^2}+\frac{y^2}{b^2}=1$

27. If a young man rides his motorcycle at a speed of 25 Km/hr, he has to spend ₹ 2 per Km on petrol. If he rides at a faster speed of 40 Km/hr the petrol cost increases to ₹ 5 per Km. He has ₹ 100 to spend on petrol and wished to cover the maximum distance within one hour. Express this as L.P.P. and then solve it graphically.

28. Find the area of the region $\{(x,y): y^2 \le 4x, 4x^2+4y^2 \le 9\}$

or

Find the area of the region $\left\{(x-1): |x-1| \le y \le \sqrt{5-x^2}\right\}$

29. Find the distance of the point (1, –2, 3) from the plane x – y + z = 5 measured parallel to the line $\frac{x}{2}=\frac{y}{3}=\frac{z}{-6}$

Atomic Energy Central School No-4, Rawatbhata
Confidence Examination-I (2018-19)
Time : 3 hours Class: XII , COMPUTER SCIENCE M.M.: 70

Q.1 (a) What is inline function? Explain the working of it with a suitable example in C++? [2]

(b) Name the header files, to which following built-in functions belongs: [1]
(i) exit() (ii) ceil()

(c) Find out the errors in the following program. Underline each correction if any. [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<<setw(4)<<S;
}
```

(d) 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);
}
```

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

```
#include<iostream.h>
void repch(char s[])
{
  for (int i=0;s[i]!='\0';i++)
  {
     if(((i%2)!=0) &&(s[i]!=s[i+1]))
       {
```

```
            s[i]='@';
           }
        else if (s[i]==s[i+1])
            {
             s[i+1]='!';
             i++;
            }
        }
    }
    void main()
    {   char str[]="SUCCESS";
        cout<<"Original String"<<str
        repch(str);
        cout<<"Changed String"<<str;
    }
```

(f) Observe the following program Score.cpp carefully. If the value of Num given by the user is 5, choose the correct possible output(s) from the option from (i) to (iv), and justify your option. [2]

```
//Program : Score.cpp
#include<stdlib.h>
#include<iostream.h>
void main()
{ randomize();
  Int Num, Rndnum;
  cin>>Num;
  Rndnum = random(Num) + 5;
  for(int N = 1 ; N<= Rndnum ; N++)
    cout<<N <<" ";
}
```

Output Options:

(i) 1 2 3 4 (ii) 1 2 (iii) 1 2 3 3 4 5 6 7 8 9 (iv) 1 2 3

Q.2 (a) Define functions overloading with example? [2]

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

```
class Interview
{ int month;
public:
Interview( int Y ) { month = y; }       // Constructor 1
Interview ( Interview & t );    // Constructor 2
};
```

(1) Create an object, such that it invoke constructor 1.

(2) Write complete definition for constructor 2.

(c) Define a class Batsman with the following specifications: [4]

Private Members:

Bcode	4 digit code number
Bname	20 character name of batsman
Inning, Notout, Runs	interger type
Batavg	batting average = Runs/(Inning-Notout)
Calcavg()	function to calculate Batavg.

Public Members:

Readdata():- function to accept values for Bcode, Bname, Inning and Notout and call the Calcavg() function.

Displaydata():- function to display the data members on the screen, in readable format.

(d) Consider the following and answer the questions given below: [5]

```
class CEO
{ double Turnover;
protected:
  int Noofcomp;
public:
  CEO();
  void INPUT(int);
  void OUTPUT();
};
class Director : public CEO
{ int Noofemp;
public:
  Director ();
  void Indata();
  void Outdata();
protected:
  float Funds;
};

class Manager : public Director
{ float Expenses;
public:
  void Display();
  Manager();
}
```

1) Which constructor will be called first at the time of declaration of an object of class Manager?
2) How many bytes will an object belonging to class Manager require?
3) Name the member function(s), which are directly accessible from the object of class Manager.
4) Is the member function Output() accessible by the object of the class Director and why?
5) If the class Manager is derived in protected mode in place of public then, give the names of inherited members in the protected section only?

Q.3

(a) An array A[1..10][-1..10] is stored in the memory with each element occupying 4 bytes of space. Assuming the address of A[5][9] is 1500 then compute the base address of A and also the address of A[7][2], when the array is stored as row wise. [4]

(b) Write a function in C++ which accepts an array of following structure type and its size as arguments and sort the array in ascending order of price by using Bubble or Selection Sort Methods. [3]

```
struct ITEM
{ int code;
  char Name[20];
  float Price;
```

```
};
```

OR

Write a function in C++ which accepts an integer array and its size as arguments and replaces elements having even values with its half and elements having odd values with twice its value.
Example : if an array of five elements initially contains the elements as
3, 4, 5, 16, 9
then the function should rearrange the content of the array as: 6, 2, 10, 8, 18

(c) Write a function in C++ which accepts a 2-D array of integers as argument and displays the sum of all odd elements in each row which are divisible by 3.
Example, if the array content is
3 5 4 2 [3]
7 6 9 1
2 1 8 3
Output through the function should be :
Sum of Row 1 : 3
Sum of Row 2 : 9
Sum of Row 3 : 3

(d) Write a function FindPlayer() in C++ to find & display the record of a player from a dynamically allocated Queue implemented with the help of following structure. The function will receive the Front, Rear and the player ID to be search from Queue as arguments. (Assume the queue is already created with some elements.) [4]

```
struct Cricket
{       int Pid;              // Player ID
        char Pname[20];  // Player Name
        char Type[20];     // Batsman or Bowler or Keeper or Others
       Student *next;
}*Front, *Rear;
```

(e) Convert the following infix expression into postfix expression. Show the stack status after execution of each operation. [2]
X – (Y / (Z+U)) * V

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

Q.4 (a) Observe the program segment given below carefully and fill in the blanks marked as statment1 and statement2 using write() and remove() functions for performing the required task. [2]

```
#include<fstream.h>
class Emp
{       int Eno;
        char name[20];
public :
  void deleteRec(int Eid); //function which will delete the data of a specific employee
}eobj;
void Emp::deleteRec(int Eid)
{       fstream file;
        file.open("Emp.dat", ios::in|ios::out | ios::binary);
        ofstream ofile("temp.dat");
```

```
        while(file.read((char *) this, sizeof(eobj)))
        {       if( this -> Eno != Eid)
                _____  //statement1
        }
        _____           //statement 2
        rename("temp.dat","Emp.dat");
  }
```

(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: 3 [3]

```
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) Define the following functions with its syntax and usage.
(i) seekp() (ii) fail() [2]

Q.5

(a) Consider the following relation and perform the relational algebra operation (for Q. 1 & 2): [2]

Customer:

id	Name	Banker name	Amount	Balance
C001	reva	reva	21000	22000
C002	ramesh	ajit	10000	25000
C003	kalpana	ajit	5000	35000
C004	sonali	reva	12000	22000
C005	ajay	kamal	5000	13000

1) Find the name of customer with their banker name from the relation customer.
2) Find out the name and balance of customer with the banker "ajit".

OR

Define the following :
(i) Primary Key (ii) Degree (iii) Cardinality (iv) Tuple

(b) Consider the following WORKERS and DESIG. Write SQL commands for the statements (i) to (iv) and give outputs for SQL queries (v) to (vi) [6]

WORKERS

W_ID	FIRSTNAME	LAST NAME	ADDRESS	CITY
102	Sam	Tones	33 Elm St.	Paris
105	Sarah	Ackerman	440 U.S. 110	New York
144	Manila	Sengupta	24 Friends Street	New Delhi
210	George	Smith	83 First Street	Howard
255	Mary	Jones	842 Vine Ave.	Losantiville
300	Robert	Samuel	9 Fifth Cross	Washington

335	Henry	Williams	12Moore Street	Boston
403	Ronny	Lee	121 Harrison St.	New York
451	Pat	Thompson	11 Red Road	Paris

DESIG

W_ID	SALARY	BENEFITS	DESIGNATION
102	75000	15000	Manager
105	85000	25000	Director
144	70000	15000	Manager
210	75000	12500	Manager
255	50000	12000	Clerk
300	45000	10000	Clerk
335	40000	10000	Clerk
403	32000	7500	Salesman
451	28000	7500	Salesman

(i) To display the content of workers table in ascending order of first name.

To display the firstname, City and total salary of all Clerks from the tables workers and design, where total salary is calculated as salary + benefits.

(iii) To display the minimum salary among Managers and Clerks from the table DESIG.

(iv) Increase the Benefits of all Salesmen by 10% in table DESIG.

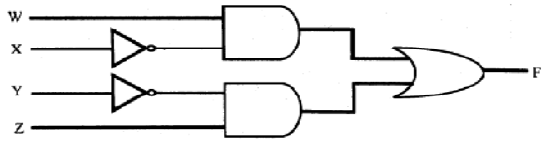
(v) SELECT FIRSTNAME, SALARY FROM WORKERS, DESIG WHERE DESIGNATION = 'Manager' AND WORKERS.W_ID = DESIG.W_ID;

(vi) SELECT DESIGNATION, SUM(SALARY) FROM DESIG
GROUP BY DESIGNATION HAVING COUNT(*)>=2 ;

Q.6

(a) State and verify Demorgan's Law in Boolean Algebra. [2]

(b) Find out the output for the following logic circuit diagram [1]



(c) Write the Product of Sum form of the function H (U, V, W). Truth table representation of H is as follows: [2]

U	V	W	H
0	0	0	0
0	0	1	0
0	1	0	1
0	1	1	0
1	0	0	1
1	0	1	0
1	1	0	1
1	1	1	1

(d) Minimize the following function using K- map and find out the expression [3]
$F(A, B, C, D) = \sum (5,6,7,8,9,12,13,14,15)$

(e) Obtain a simplified from for a Boolean expression: [3]
$F (U, V, W, Z) = \prod (0, 1, 3, 5, 6, 7, 15)$

(f) Convert the following Boolean expression into its equivalent canonical sum of products (SOP) form: [2]

$$(U + V + W)(U + V + \overline{W})$$
$$(\overline{U} + V + W)(\overline{U} + \overline{V} + \overline{W})$$

Atomic Energy Central School No 4 Rawatbhata

Confidence – Examination- I (2018-2019)

M.M. 70 Class – XII , Biology Time: 3Hrs

General Instruction:-

1) There *are a total of 27 questions and five sections in the questions paper. All questions are compulsory.*
2) *This question paper consists of four sections A, B, C and D. Section 'A' consists of 5 question of one mark each. Section 'B' is of 7 questions of 2 marks each, section 'C' is of 12 questions of 3 marks each and Section 'D' consists of 3 questions of five marks each.*
3) *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.*
4) *Wherever necessary, the diagrams drawn should be neat and properly labeled.*

SECTION 'A'

1. Name the primary and secondary lymphoid organs.
2. What is biofortification? State its importance?
3. State the role of C peptide in human insulin.
4. Why must a cell be made 'competent' in biotechnology experiments?
5. Vivaan eat curd. In this case, which tropic level will he occupy?

SECTION 'B'

6. Male human and female birds are heterogametic while the female human and male birds are homogametic. Why?
7. Differentiate between grazing food chain and detritus food chain?
8. Explain how Darwin's concept of evolution is different from that of de Vries?

   OR
9. Explain the importance of DNA ligase during DNA replication.
10. What is mutation breeding? How it has helped in improving the production of mung bean crop?
11. What are the roles of 'Ori' and restriction site in a cloning vector pBR322?
12. Identify A, B, C and D in the following table:

Organism	Bioactive molecule	Use
Monascus	A	Lower blood cholesterol
B	Streptokinase	C
Trichoderma	D	Immunosuppressive agent

SECTION 'C'

13. Diagrammatically explain the three different ways by which natural selection can affect the frequency of a heritable trait in a population.
14. (a) Draw a well labeled diagram of a section through ovary?
    (b) Name the embryonic stage that gets implanted in the uterine wall of a human female.
15. Differentiate between chasmogamous and cleistogamous flowers? Can cross pollination occur in cleistogamous flowers? Give reason.
16. Name two cloning vectors. Describe the features required to facilitate cloning into a vector.

    OR

    What happens when *Meloidogyne incognitia* consume cells with RNAi gene?
17. Since the origin of life on Earth, there were five episodes of mass extinction of species.
    (a) How is the 'Sixth Extiction', presently in progress, different from the previous episodes?
    (b)Who is mainly responsible for the 'Sixth Extiction'?
    (c) List any four points that can help to overcome this disaster.
18. " In food-chain, a trophic level represents a functional level, not a species." Explain.
19. (a) Name any two fowls other than chicken reared in poultry farm.
    (b) Enlist four important components of poultry farm management.

20. List down three control measures to check population explosion?
21. What is DNA fingerprinting? Write down its two applications.
22. Following is the flow chart highlighting the step in DNA fingerprinting technique. Identify A,B, C, D, E, and F JkIsolation of DNA from blood cell

↓

Cutting DNA by 'A'

↓

Separation of DNA fragments by electrophoresis using 'B'

↓

Blotting of fragments to 'C' membrane

↓

DNA splits into single strands

↓

Introduction of labeled 'D' probes

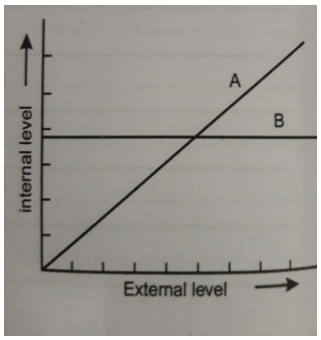
↓

'E' of single strands with 'D'

↓

Detection of banding pattern of 'F'

23. The following graph represents the organism's response to certain environmental condition.



(a) Which one of these A or B depicts conformers?
(b) What does the other line graph depict?
(c) How these organisms do differ from each other with reference to homeostasis?
(d) Mention the category to which human belongs?

OR

A factory drains its waste water into nearby lake. It has caused algal bloom.
(a) How was the algal bloom caused?
(b) What would be the consequences?
(c) Name the phenomenon that caused it?

24. (a) How is a cancerous cell different from a normal cell?
(b) What do you understand by metastasis?

SECTION 'D'

25. Explain the events occurring in a menstrual cycle in human female?

OR

(a) With a neat, labeled diagram, describe the parts of atypical angiosperm ovule.
(b) What is meant by monosporic development of female gametophyte/

26. (a) Mention the advantages of selecting pea plant for experiment by Mendel.
(b) Diagrammatically explain the cross between tall plants with yellow seeds (TtYy) and tall plant with green seed (Ttyy). Work out the cross up to F_2 generation .

OR

What is transcription? With the help of a diagram, explain the process of transcription.

27. What are transgenic animals? Explain any four ways in which such animals are helpful to humans?

OR

Explain the process of
A. Cutting of desired gene at specific location.
B. Synthesis of multiple copies of desired gene.

परमाणु ऊर्जा केन्द्रीय विद्यालय क्रमांक -4 रावतभाटा

d{kk & XII (2018-19), fgUnh

vkRefo'okl i'u i= 1

le; % 3 ?kV **i.kkd % 80**

- lHkh i"u djuk vfuok;Z gA

[k.M ¼d½

i1 fuEufyf[kr x|k"k dk i<dj iN x, i"uk d mRrj nhft,A

tgk Hkh nk ufn;k vkdj fey tkrh g] ml LFkku dk viu n"k e rhFk dgu dk fjokt g vkj ;g doy fjokt dh ckr ugh g ge lpep ekur g fd vyx&vyx ufn;k e Luku dju l ftruk i.; gkrk g] mll dgh vf/kd i.; lxe LFkku e gA fdr] Hkkjr vkt ftl nkj l xtj jgk g] mle vlyh lxe o LFkku] o lHkk, rFkk o ep g] ftu ij ,d l vf/kd Hkk'kk, ,d= gkrh gA ufn;k dh fo"k'krk ;g g fd o viuh /kkjkvk e vud tuink dk lkjHk] vud tuink d vkl vkj mYykl fy, pyrh g vkj mudk ikjLifjd feyu okLro e ukuk tuink d feyu dk gh irhd gA ;gh gky Hkk'kkvk dk Hkh gA mud Hkhrj Hkh ukuk tuink e clu okyh turk d vkl vkj mex] Hkko vkj fopkj] vk"kk, vkj "kdk, lekfgr gkrh gA vr% tgk Hkk'kkvk dk feyu gkrk g] ogk okLro e] fofHkUu tuink d gn; gh feyr g] mud Hkkok vkj fopkjk dk gh feyu gkrk g rFkk fHkUurkvk e fNih gb ,drk ogk dN vf/kd iR;{k gk mBrh gA bl nf'V l Hkk'kkvk d lxe vkt lcl cM rhFk g vkj bu rhFkk e tk Hkh Hkkjroklh J)k l Luku djrk g] og Hkkjrh; ,drk dk lcl cMk flikgh vkj lr gA

gekjh Hkk'kk, ftruh gh rth l txxh] gekj fofHkUu in"kk dk ikslLifjd Kku mruk gh c<rk tk,xkA Hkkjrh; y[kdk dh cgr fnuk l ;g vkdk{kk jgh Fkh f do doy viuh gh Hkk'kk e ifln/k gkdj u jg tk,] cfYd Hkkjr dh vU; Hkk'kkvk e Hkh mud uke igp vkj mudh dfr;k dh ppk gkA Hkk'kkvk d tkxj.k d vkjHk gkr gh ,d idkj dk vf/ky Hkkjrh; ep vki l vki idV gku yxk gA vkt iR;d Hkk'kk d Hkhrj ;g tkuu dh bPNk mRiUu gk xb g fd Hkkjr dh vU; Hkk'kkvk e D;k gk jgk g] mue dku&dku ,l y[kd g ftudh dfr;k mYy[kuh; g rFkk dku lh fopkj/kkuk ogk iHkklRrk ikIr dj jgh gA

¼d½ y[kd u vk/kfud lxe LFky fdldk ekuk g vkj D;k \ **2**

¼[k½ y[kd d vulkj lcl cMk flikgh vkj lr dku g \ **2**

¼x½ fHkUu&fHkUu in"kk e vkilh Kku dl c< ldrk g \ **2**

¼?k½ Hkk'kkvk d tkxj.k l y[kd dk D;k vfHkik; g \ **2**

¼M½ ^mYy[kuh;^ rFkk ^ikjLifjd^ "kCnk e i0;; crkb,A **1**

¼p½ foyke "kCn crkb, & fHkUurk] iR;{k **1**

¼N½ LorU=rk ikfIr d ckn fofHkUu Hkk'kkvk d y[kdk e D;k ftKklk mRiUu gb\ **2**

i2 fuEufyf[kr i|k"k dk i<dj iN x, i"uk d mRrj nhft,A **1x4=4**

eDr djk ukjh dk] ekuo! mldk e[k tx dk idk"k gk]
fpj cfnfu ukjh dk] mB v/k voxBuA

;x&;x dh ccj dkjk l eDr djk thou&lfxfu dk]
Tkufu] l[kh] l;kjh dk! tufu nfo dk vknr
fNUu djk lc Lo.k ik"k txthou e ekuo d lx
mld dkey ru&eu d] gk ekuoh ifrf'Br!
o vkHk'k.k ugh] nke lke Lox gk /kjk] e/kj
mld cnh thou d! Ukkjh efgek l efMr]
ml ekuoh dk xkjo n Ukkjh&e[k dh uo fdj.kk l
i.k lRo nk uru] ;x&iHkkr gk T;kfrr!

¼d½ dfo ukjh dk fdl n"kk l eDr djkuk pkgrk g\ og mld fHkUu&fHkUu :ik dk mYy[k D;k dj jgk g \

¼[k½ dfo ukjh d vkHk'k.kk dk mld vydj.k d lk/ku u ekudj mUg fdl :ik e n[k jgk g \

¼x½ og eDr ukjh dk fdu&fdu :ik e ifrf'Br djuk pkgrk g \

¼?k½ vk"k; Li'V dhft, %

Ukkjh&e[k dh uo fdj.kk l ;x iHkko gk T;kfrr!

[k.M ¼[k½

i3 fuEufyf[kr e l fdlh ,d fo'k; vuPNn fyf[k,A **5** ¼v½

ernku dk egÙo ¼c½ in'k.k dh leL;k

¼l½ ukjh f"k{kk ¼n½ vk/kfud ;x e dEl;Vj

lk4 vkidk ikuh dk ehVj dkQh le; l [kjkc gA bldh f"kdk;r uxj **fuxe** d dk;ikyd vfHk;rk l djr g, i= fyf[k,A **5**

vFkok

lMd dk pkMk dju d cgku vko";drk l vf/kd iM dkV x,A bldh foLrr tkudkjh nr g, ou ,o l;koj.k foHkkx dk ,d i= fyf[k,A

lk5 fuEufyf[kr i"uk d lf{kIr mRr fyf[k,A **1x4=4**

¼d½ fo"k'k fjikV fdl dgr g \

¼[k½ fo"k'k y[ku vkj lkekU; y[ku dh Hkk'kk "kyh e D;k vUrj g \

¼x½ it&Fkh i=dkfjrk dk D;k vk"k; g \

¼?k½ okp Mkx i=dkfjrk l vki D;k le>r g \

lk6 ^MkDVjk dh gMrky^ vFkok ^fnu&ifrfnu c<r v/kfo"ok l^ fo'k; ij ,d vky[k fyf[k,A **3**

lk7 ^cLr dk c<rk ck>^ vFkok ^pukoh ok;n^ fo'k; ij ,d Qhpj fyf[k,A

[k.M ¼x½

i8 fuEufyf[kr i|k"k dk i<dj iN x, i"uk d mÙkj nhft ,A **2x3=6**

NkVk ejk [kr pkdkuk

dkxt dk ,d iUuk

dkb v/kM dgh l vk;k
{k.k dk chp
ogk ck;k x;kA

¼d½ ;gk [kr l D;k vfHkik; g \
¼[k½ i|k"k e dfo de dk fdld leku crk;k g \
¼x½ vorj.k d dyk i{k ij fVli.kh djA

vFkok

dfork ,d [ky g cPpk d cgku
cgkj Hkhrj
;g ?kj] og ?kj
Lkc ?kj ,d dj nu d eku
cPpk gh tkuA

¼d½ i|k"k e dfork dh ryuk fdll dh xb g \
¼[k½ dfork vkj cPpk e D;k lekurk crkb xb g \
¼x½ cPpk dku lk cgkuk tkurk g \

i9 fuEufyf[kr e l fdlh ,d i|k"k dk i<dj iN x, i"uk d mRrj fyf[k,A **2x2=4**
vxj o dHkh fxjr g Nrk d [krjukd fdukjk l
vkj cp tkr g rc rk
vkj Hkh fuMj gkdj lugy ljt d lkeu vkr g
iFoh vkj Hkh rt ?kerh gb vkrh g
mud cpu ijk d ikl!

¼d½ i|k"k dk Hkko Li'V dhft,A
¼[k½ dk0;k"k dk dyk i{k ij fVli.kh djA

vFkok

ge njn"ku ij ckyx
ge leFk "kfDroku
ge ,d ncy dk yk,x
,d cn dej e

¼d½ dk0;k"k e fdl ij 0;X; fd;k x;k g \
¼[k½ dk0;k"k e dfo D;k iLrr djuk pkgrk g \

i10 fuEufyf[kr i"uk e l fdUgh nk i"uk d mRrj fyf[k,A **3x2=6**
¼d½ Hkkj d uHk dk j[kk ; yhik] xhyk pkdk dh lKk nh xb g] D;k \
¼[k½ ijn ij oDr dh dher g] dgdj dfo u ij lk{kkRdkj dk fdl :lk e idV fd;k g\
¼x½ i"klk dk 0;fDr ij D;k iHkko iMrk g \ ^ckr lh/kh Fkh ij^ dfork d vk/kkj ij crkb,A

i11 fuEufyf[kr e l fdlh ,d x|k"k dk i<dj iN x, i"uk d mRrj nhft,A

eu je x;k rk Hkj Hkknk e Hkh fu?kkr Qyrk jgrk gA tc mel l ik.k mcyrk jgrk g vkj y l gn; l[krk jgrk g] ,dek= f"kjh'k dkyt;h vo/kr dh Hkkrh thou dh vt;rk dk e=&ipkj djrk jgrk gA ;|fi dfo;k dh Hkkrh gj y iRr dk n[kdj eX/k gku yk;d gn; fo/kkrk u ugh fn;k g] ij furkr BB Hkh ugh gA f"kjh'k d x.k ej ekul e FkkMk fgYyky t:j ink djr gA

¼d½ vk"k; Li'V dhft, & eu je x;k rk Hkj Hkknk e Hkh fo?kkr Qyrk jgrk gA

¼[k½ f"kjh;k thou dh vt;rk dk e= dl ipkfjr djrk g \
¼x½ ^furkr BB^ l ;gk D;k rkRi; g\ y[kd Lo; dk furkr BB D;k ugh ekurk\

vFkok

;g foMcuk dh gh ckr g] fd bl ;x e Hkh ^tkrh^ d ik'kdk dh deh ugh gA bld ik'kd db vk/kkjk ij bldk leFku djr gA elFku dk ,d vk/kkj ;g dgk tkrk g] fd vk/kfud lH; lekt ^dk;&d"kyrk^ d fy, Je foHkktu dk vko";d ekurk g vkj pfd tkfr&iFkk Hkh Je foHkktu dk gh nljk :Ik g blfy, ble dkb cjkb ugh gA bl foHkktu d lkFk&lkFk Jfed&foHkktu dk Hkh :Ik fy, g, gA

¼d½ y[kd fdl foMcuk dh ckr dgrk g \
¼[k½ tkfrokn d ik'kd viu leFku e D;k rd nr g \
¼x½ y[kd fdu ij 0;X; djrk g \

i12 fuEufyf[kr i"uk d mRrj fyf[k,A

¼d½ pflyu d 0;fDr dh fo"k'krkvk dk mYy[k dhft,A **3**

¼[k½ ued dgkuh d vk/kkj ij crkb, fd Hkkjr o ikd dh turk d vkjkfir HknHkkvk d chp egCcr dk uedhu Lokn dl ?kyk gvk g \ **3**

¼x½ dkey vkj dBkj nkuk Hkko fdl idkj xk/kh th d 0;fDrRo dh fo"k'krk cu x, \ **3**

¼?k½ ^ued^ dgkuh e ikfdLrku d fdl "kgj dk o.ku g \ **1**

i13 viuh ikB; iLrd ^forku Hkkx&2^ e ldfyr ikBk d vk/kkj ij iN x, fdUgh nk i"uk d mRrj nhft,A **2x4=8**

¼d½ D;k ik"pkR; lLdfr d iHkko dk ^flYoj ofMx^ dgkuh dh ey lonuk dgk tk ldrk g \ rd lfgr mRrj nhft,A
¼[k½ ^t>^ dgkuh e fpf=r xkeh.k thou dk lf{kIr o.ku viu "kCnk e dhft,A
¼x½ ^vrhr e nc iko^ d vk/kkj ij ml ;x dh lH;rk vkj lLdfr d fo'k; e viu fopkj iLrr fdft,A

i14 fuEufyf[kr fuc/kkRed i"uk e l fdlh ,d i"u dk mRrj nhft,A **4**

¼d½ ^t>^ dgkuh d y[kd e dfork&jpuk d ifr :fp dl mRiUu gb \
¼[k½ fl/k&lH;rk e [krh dk mUur :Ik Hkh n[ku dk feyrk g] Li'V dhft,A

Atomic Energy Central School No. 4,Rawatbhata

Confidence Examination – I (2018-19)

Time: 3 Hrs. Class XII , Physical Education MM: 70

Instructions: 1.The question paper consist of 26 questions.

2.All the questions are compulsory.

3.The word limit for the questions carrying 1 marks is approximately 20-30 words.

4. The word limit for the questions carrying 3 marks is approximately 80-100 words.

5. The word limit for the questions carrying 5 marks is approximately 150--200 words.

QUESTIONS

Q.1.What is Sports Training? 1

Q.2.Differentiate between Abduction and Adduction movements. 1

Q.3.Write the aim and objectives of First Aid. 1

Q.4.What is Second Wind? **Or** 1
What is Micro Cycle?

Q.5.Name the instrument used in Pinch Test. 1

Q.6.What do you understand by Bulimia? **Or** 1
What is Sports Medicine?

Q.7.What is Knock Knees? Suggest any two corrective exercises. 1

Q.8.What is Cognitive disability? **Or** 1
Mention any two disadvantages of Friction.

Q.9.Explain the Psychological benefits of Asanas. 1

Q.10.What is Food Supplements? **Or** 1
Name the test used to measure the upper body Flexibility in Senior citizens.

Q.11.Write short note on “Run for Cause”. 1

Q.12.Describe the Specific exercises for developing Strength. **Or** 3
Explain the PRICE and MICE methods of treatment?

Q.13.Participation in sports has improved Psychological aspects of women. How? 3

Q.14Explain the plain of motion and axis work on it. **Or** 3
What is Diabetes? Write the benefits and contraindications of anyone asana help in curing it

Q.15.Write the strategies to make physical activities assessable to children with special needs. 3

Q.16.Explain the method for preparing Knock Out fixture. 3

Q.17.Describe the effects of exercises on muscular system. 3

Q.18.Write the effects of any three Nutrients during Physical activity. **Or** 3
What si Weight training? What are the Safety measures to be taken during Weight training.

Q.19.Give the description of any three test of Rikli and Jones. 3

Q.20.Write the types of Endurance and methods of developing it. 5

Q.21.Explain and draw a knockout fixture of 31 teams. 5

Q.22.Describe the causes, symptoms and management of Attention defiant /Hyperactivity disorder. **Or** 5
What is Motor development? Write its type and Explain the factors affecting it.

Q.23.What do you mean by Sports injuries? Write its causes. 5

Q.24.How asanas act as a preventive measure for treating health ailments. 5

Q.25.Explain the factors influence the sports participation of women. 5

Q.26.Describe the causes of Bad Posture. Explain Lordosis and its corrective measures. **Or** 5
What is Tournament. Write its type and explain Consolation & Combination tournament.
