# Atomic Energy Central School No. 4 , Rawatbhata
## Half Yearly Examination (2018-19)
## Time : 3 hrs Class : XII , English Max. Marks: 100

Name of the student _____ Roll No._____Class-Sec_____Invig Sign._____

**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 (30)**

**Q.1.** Read the passage given below**. (12)**

1. The Titanic, in its watery grave, is a great museum of human history and is at risk of being lost forever because of curious voyagers and treasure hunters, fears Bob Ballard, who first discovered the remains of the iconic ship in 1985. Famous for discovering the great ship, Ballard is a former US Navy Officer and a professor of oceanography.
2. " Titanic is a museum of human history without door and guard. I am deeply concerned about not only the Titanic but all the ancient history that is now at risk. If we cannot save this iconic ship, then there is very little hope we can save ancient ships. The world should realize that you don't have to go down and take everything and you do not have to do a treasure hunt. This is a common heritage of all of us and if we really want to take steps to preserve human history in the ocean, we need to start with Titanic," Ballard said in a telephonic interview from London.
3. Ballard, as part of a tie-up, is presenting a documentary called " Save the Titanic" on the 100th anniversary of the sinking of the great ship – April 15, 1912. The ship and her fate continue to fascinate , largely because of the horror that took place that night, with 1,522 passengers and crew losing their lives.
4. Ballard says that despite being on the ocean floor for 100 years, the ship is full of human footprints. "You will find pairs of shoes everywhere. The sea and the life below has claimed everything but they do not know what to do with shoes. So you will find a pair of mother's shoes next to her little daughter and that's their gravestone. At her wreckage , we almost felt that we were surrounded by the lifeboats of all the people that were in the water at that spot".
5. Ballard shows that the fate of Titanic continues to fascinate so many years after it sank because it is "irony personified in history". "The story has all the ingredients to make it timelessly fascinating. You have this revolutionary ship that's unsinkable, and carrying a cross section of people in society. And then, it goes and hits an iceberg and sinks on its maiden journey. It's an irony personified in history".
6. "In the 90s, advanced technology gave us double diving capabilities in the Atlantic ocean. I knew that the Titanic was sitting at almost 12,000 feet. What led me to her discovery was a simple technique that I followed. We decided to look for the debris trail instead of the ship".
7. Ballard says the ship, if preserved well and not subjected to constant submarine journeys, will last for a long time on the Atlantic floor. "The deep sea, because of its darkness, its cold temperatures and its great pressure, creates a high state of preservation. With a little caution, we can protect the Titanic for future generations to visit".
8. Ballard has also connected to the people of Belfast, who refused to talk about the tragedy . The ship's construction took place at Belfast. After the tragedy, families of the workers refused to talk about it because of the shame and sadness in the loss of life involved".

1.1. On the basis of your reading of the passage , answer the following questions by choosing the best of the given choices : **1x4 = 4**

(a) The Titanic sank on
i)its 100th anniversary ii) 15th April, 1912 iii)an iconic voyage in 1985 iv) None of the above

(b) The Titanic continues to attract attention because
I)it is irony personified in history II)its advanced technology gave double diving technologies
III)it is a treasure hunt IV)it is a common need

(c) Ballard's documentary on the Titanic is titled
I)A museum of human history II)The titanic III)Save the Titanic IV)None of the above

(d) Bob Ballard is a
I)Former US Navy Officer II) A professor of oceanography III)Both (i) and (ii) IV) None of the above

1.2. Answer the following questions briefly : **1x6 = 6**

(a) What happened on April 15, 1912?

(b) Who is Bob Ballard and what did he discover?
(c) Why does Bob Ballard call it a museum of human history ?
(d) Why did the people of Belfast refuse to talk about Titanic ?
(e) What did Ballard do as part of the 100th anniversary of the sinking of the Titanic ?
(f) Explain " it is irony personified" very briefly.

1.3. Find the words from the passage which mean the same as : **1x2**

(a) first of its kind ( para 5) (b) very solemn or serious ( para 6)

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

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

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

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

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

**(A)** On the basis of your reading of the above passage, answer the following questions by choosing the correct option.**(1x2)**

(i) Growth in expenditure in Child care in the USA started in the year …… .
(a)1980 (b)1990 (c)1997 (d)Not given in the passage

(ii) Promising developments in the USA in the field of child care includes ……. .
(a)expansion of Head Start programme (b)establishment of early Head Start programme
(c)growth of state kindergarten programme (d) all of the above

**(B)** Answer the following questions briefly. **(1x6)**

i. What have been made national policy priorities after more than 40 years?
ii. What did the Child Care and Development Block Grant Programme do?
iii. Why is there no guarantee that children in early care and education will get a safe and development oriented care?
iv. What is the difference in child care costs between rich and poor families?
v. What 'historical separation' is being bridged by recent government policy developments ?
vi. What are the promising developments?

**C.** i. The word ……. is an antonym of 'reducing' (Paragraph -2) **1**
ii.. The word …… is a synonym of 'together'**.** (Paragraph – 4) **1**

**Q.3.** Read the passage given below and answer the questions that follow**.** **(8)**

Fasting, in some form or the other, is a part of every religion. In Islam, it is called 'roza'. The Arabic equivalent of roza is 'sawm'. Sawm literally means abstinence, i.e. to refrain from doing something. The nine month of the Hijri calendar, i.e. Ramzan, has been especially chosen for fasting. Fasting during the month of Ramzan is obligatory for every Muslim, except when he has a genuine reason not to do so.

In every human being, there are two faculties to take into consideration: one is desire and the other is reason. In all matters, the individual has to decide whether to follow his desire or his reason. The great merit in fasting is that it trains us to refrain from following our desires and instead always to bow to reason. That is the spirit of sawm.

According to the Prophet of Islam, one who fasts should never stoop to using abusive language; if someone abuses him, he should simply say 'I am fasting'. Islamic fasting, as far as formal practice is concerned, is to abstain from food and drink. But the actual spirit of fasting is to refrain from indulging in negative thinking and the use of negative language. Self-control, far from being a negative or passive action, has great value in human behavior. In life, there are more than 50% occasions when one should refrain from action and less than 50% occasions when one should take action. This is the formula for success for both individuals and society.

Self-control is integral to social ethics. If you live alone on an island, there is no need for any control, as the absence of others leaves you free to do whatever you want to do. However, when you are living in a society, you have to give leeway to others. This is what every person on the road does when he drives a car: he either keeps to the left ( or to the right depending upon which country he is in) so that he gives way to other cars and can carry on his journey without accidents. This principle is applicable to the entire life of an individual. It entails giving others the chance to live their lives while living one's own life.

Self-control is a kind of mutual adjustment. When a person adopts the way of self-control, it is far-reaching in effects. In this way, he promotes the culture of self-control in a society and indicates to others through his actions that they should follow the path that he is following. Thus, the way of self-control leads to a better society, while lack of self-control in individuals leads to the destruction of peace. As far as the individual is concerned, self-control serves as a means of personality development. This way of life, in turn, saves others from unnecessary problems.

There is a 'pre-control' for exercising self-control and i.e. thinking. When a person adopts a life of self-control, at all times he first thinks about what path he should tread. Only after considerable thought does he plan out his course of action. A life lived in this way will necessarily be marked by creative thinking. In addition, self-control contributes to one's intellectual development and turns one into a man of wisdom.

In Islam, fasting is worship for god. Fasting is the kind of worship, which is simultaneously for the sake of God and man. Thus, if fasting is observed in the right spirit, in all sincerity, it will make an individual pious and responsible.

**(a)** On the basis of your reading of the above passage, make notes on it using headings and sub-headings. Use recognizable abbreviations wherever necessary (minimum 4). Supply a suitable title to it. **(5)**

**(b)** Write a summary of the above passage in about 80 – 100 words. **(3)**

**Section – B. Advanced Writing Skills (30)**

4. R. J. Public School is located in a central Government employees residential colony. Cultural Society of the school has decided to organize a fancy dress show on 25th of September,2018 in which each participant will wear the dress particular to his/her region. The aim is to show the cultural diversity of India. As Secretary write a notice in about 50 words inviting the names of those who want to participate**.** **4**

**OR**

Recently your school celebrated Sadbhawana Diwas on 2oth of August, 2018. You were present in the celebratory team. Design a poster on this event.

5. You are Principal, Kendriya Vidyalaya, Kota. The number of students in the computer class is increasing. Next year starting in April, 2019, you will need 25 more computers in your lab. Write a letter in 120-150 words to the Commissioner, K.V. Sangathan for funds. 6

OR

You are Ashish/ Nimmi Dhar of Sawai Mansingh Road, Jaipur. You have read the advertisement given below. You are qualified for the job. Write an application in -120 -150 words along with a resume.

India Chemical Industries, Delhi
Requires
Three Accounts Officers
Qualification : B.Com.
Experience : Minimum 4 years
Job requirement : maintaining books of accounts, preparation of balance sheet etc.
Salary : Best in the industry
Apply to : Managing Director, ICI, B-12- Lodhi Road, New Delhi

6. Our performance in Asiad- 2018 has told us that we have paid enough attention to athletics and outdoor games. School children should appreciate it. Sports should be an important part of school's daily routine. Write an article in 150 – 200 words on 'Importance of Outdoor Games'. You are Santosh/ Smita. 10

OR

Cultural Society, Bal Bharti Public School, Raipur organized an adult literary camp in its neighbourhood. Write a report in 150 -200 words on the camp for your school newsletter. You are Sunita Sharma, Secretary. Use the following clues :

No. of volunteers – hours spent in teaching – location of the class – chairs, blackboards- no. of people attending the camp – benefit.

7. A few students of Literary Club of your school have written a book – 'Sky is not Far'. This book has won a national award. Write a speech in 150 – 200 words you will deliver in their honour in the morning assembly. **10**

OR

'Private cars should be banned in the congested commercial areas of the cities'. Write a debate in 150 – 200 words either for or against the motion.

**SECTION – C (Literature : Text Books And Long Reading Text ) 40 Marks**

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

Far far from gusty waves these children's faces
Like rootless weeds, the hair torn round their pallor ;
The tall girl with her weighed – down head.

(a)Who are these children ? (b)Which figure of speech has been used in the first two lines ?
(c) Why is the tall girl's head weighed down ? (d)What does the word , 'pallor' mean ?

**Or**

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

i.What should the fishermen not do? ii.What does the poet expect of the fishermen and why?
iii.What will the man gathering salt do? iv.What do the 'hurt hands' imply?

**9.** Answer any four of the following questions in 30 -40 words each : **3x4 = 12**

(a) What is linguistic chauvinism? How is it reflected in the lesson, 'The last Lesson?'
(b) Constant practice with pragmatic approach makes us perfect. Justify it with reference to the lesson, Deep Water.
(c) How does ageing process play a pivotal role in the poem, 'My Mother at Sixty Six'?
(d) What do you mean by 'green war' ? Narrate it with reference to the poem, 'Keeping Quiet'.
(e) Why did the Maharaja have to pay a bill of three lakh rupees to the British jewelers?
(f) How does Jo want the story of Roger Skunk to end?

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

Douglas fully realized the truth of Roosevelt's statement, " All we have to fear is fear itself". How did this realization help him brush aside his fear and become an expert swimmer ?

OR

The peddler thinks that the whole world is a rattrap. This view of life is true only of himself and of no one else in the story. Comment.

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

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

OR

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

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

Attempt a character sketch of Mrs. Hall.

OR

Discuss the plot of the novel, The Silas Marner by George Eliot**.**

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

Discuss the major themes in the novel, 'The Invisible Man' by H.G. Wells.

OR

The novel, 'Silas Marner' by George Eliot delineats the true picture of nineteenth century – England. Discuss it.

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ATOMIC ENERGY CENTRAL SCHOOL-4, RAWATBHATA

HALF YEARLY EXAMINATION: 2018-19

PHYSICS (Theory) Class – XII

Time allowed: 3 hours Maximum Marks: 70

General Instructions:

a) All the questions are compulsory.
b) There are 27 questions in total.
c) Questions 1 to 5 are very short answer type questions and carry one mark each.
d) Questions 6 to 12 carry two marks each.
e) Questions 13 to 24 carry three marks each.
f) Questions 25 to 27 carry five marks each.
g) 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 three questions in five marks each. You have to attempt only one of the choices in such questions.
h) Use of calculators is not permitted. However, you may use log tables if necessary.

SECTION - A

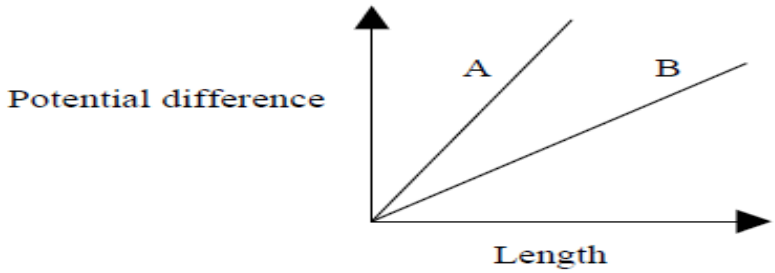
1. In which orientation, a dipole placed in uniform field is in (i) Stable (ii) Unstable equilibrium?

2.Write the expression for speed of electromagnetic waves in a medium of electrical permittivity ε and magnetic permeability μ.

3.What is the magnetic moment of an electron orbiting in a circular orbit of radius 'r' with a speed 'V'?

4. Represent graphically the variation of electric field with distance, for a uniformly charged sphere.

5. The variation of potential difference with length in case of two potentiometers A and B is given below. Which of the two is more sensitive?

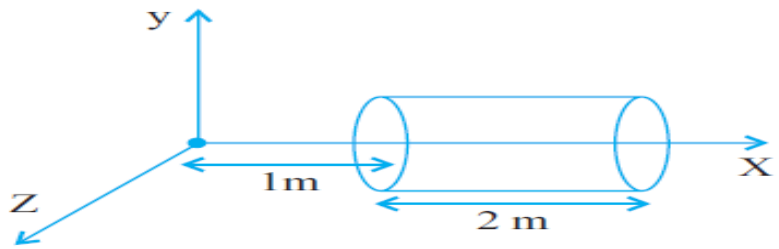



SECTION - B

6. A hollow cylindrical box of length 2m and area of cross section 25 $cm^2$ isplaced in a three dimensional coordinate system as shown in the figure. The Electric field in the region is given by E = 25 x $\vec{\imath}$ Where E is in N/C and *x* is in meters. Find

(i) Net flux through the cylinder.

(ii) Charge enclosed by the cylinder.



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

8. Give the expression for current sensitivity and voltage sensitivity of galvanometer. Increase in current sensitivity may not necessarily increase the voltage sensitivity of galvanometer. Justify.

9.Using Gauss Theorem deduce an expression for the electric field intensity at any point due to a thin, infinitely long wire of charge density λ C/m

10.Prove that an ideal capacitor, in an a.c. circuit does not dissipate power.

11. A straight wire of mass 200 g and length 1.5 m carries a current of 2 A. It is suspended in mid-air by a uniform horizontal magnetic field **B.** What is the magnitude of the magnetic field?

OR

A long cylindrical conductor of radius 'a' carries a steady current I. The current is uniformly distributed across the cross section. Apply Ampere's circuital law to calculate the magnetic field at a point 'P' at a distance 'r' from the centre of the wire for (i) r<a (ii) r>a

12. Define mutual inductance and write its S.I. units.

SECTION – C

13. Derive the expression of mutual induction between two long solenoids of radius of cross section $r_1$ and $r_2$ where $r_1 > r_2$.

14. Two cells of emf's $E_1$ and $E_2$ and internal resistances $r_1$ and $r_2$ respectively are connected in parallel to each other. Deduce expression for

(i) The equivalent emf of the combination.

(ii) The equivalent resistance of the combination.

15. 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.

16. An a.c. generator consist a coil of 50 turns and area 2.5 $m^2$ rotating at an angular speed of 60rad/s in a uniform magnetic field B = 0.30T between two fixed pole pieces .The resistance of the circuit including that coil the coil is 500 Ω.

(i) Find the maximum current drawn from the generator.

(ii) What will be the orientation of the coil with respect to the magnetic field to have (a) maximum (b) zero magnetic flux?

(iii) Would the generator work if the coil was stationery and instead the pole pieces rotated together with the same speed as above?

OR

A proton and a α-particle move perpendicular to a magnetic field. Find the ratio of radii of the circular paths described by them when both (i) have equal momenta, and (ii) were accelerated through the same potential difference.

17.A bar magnet of magnetic moment 6J/T is aligned at 60˚ with a uniform external field of 0.44 T. calculate (a) work done in turning the magnet to align its magnetic moment

(i) normal to the magnetic field, (ii) opposite to the magnetic field, and

(b) the torque on the magnet in the final orientation in case (ii)

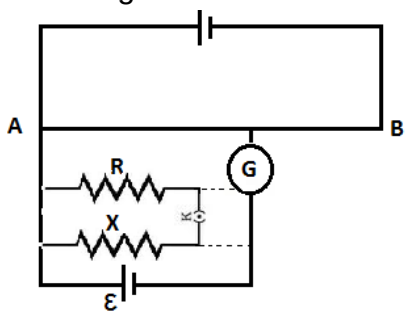
18. An electric dipole is held in uniform electric field

(i) Using suitable diagram, show that it does not undergo any translatory motion.

(ii) Derive an expression for the torque acting on this dipole.

19. 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 $B = \mu_0 I / (2\pi r)$.

20. The figure shows a potentiometer circuit for comparison of two resistances. Thebalancing point with a standard resistance of 10 is found to be 58.3 cm, while withthe unknown resistance X is 68.5 cm. Determine the value of X. What might you doif you failed to find a balance point with the given cell of emf ε.

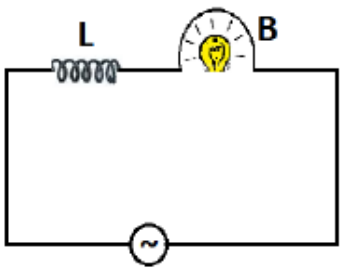



21. An inductor L of reactant $X_L$is connected in series with a bulb B to an a.c source as shown. Explain how the brightness of the bulb change when

(i) The number of turns of the inductor is reduced.

(ii) A capacitor of reactants $X_C=X_L$is introduced in series in the same circuit.

(iii) Draw a graph showing the variation of inductive reactance with appliedfrequency.




22. Distinguish the magnetic properties of dia-, para- and ferromagnetic substances in terms of

(i) Susceptibility (ii) Magnetic permeability (iii) Coercivity

Draw the field lines due to external magnetic field near a

(i) diamagnetic (ii) paramagnetic substance

23.Name Electromagnetic radiations with wavelength

(i) $\lambda_1$used to kill germs in water purifiers

(ii) $\lambda_2$used in TV communication systems

(iii) $\lambda_3$play an important role in maintaining the earth's warmth

Also arrange these wavelengths in their ascending order.

24 A potential V is applied to a conductor of length L and diameter D, how are the electric field and drift velocity affected

a) When voltage is doubled b) When length is doubled c) Diameter is doubled

SECTION – D

25. Deduce an expression for Electric potential due to an electric dipole at any point on its axis. Mention one contrasting feature of electric potential of a dipole at a point as compared to that due to single change

**OR**

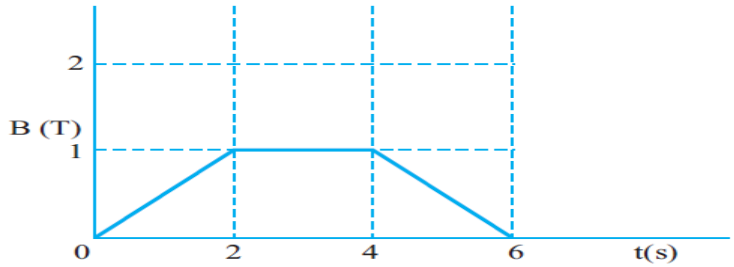
(i) With the help of labelled diagram, state the underlying principle of a cyclotron. Explain clearly how it works to accelerate the charged particle.
(ii) Show that cyclotron frequency is independent of energy of the particle. Is there an upper limit on the energy acquired by the particle? Give reason.

26. (a) Define electric flux. Write its S.I. unit.
(b) Using Gauss's law, obtain the 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.

27. (a) State Faraday's law of electromagnetic induction.
(b)The magnetic field through a circular loop of wire 12 cm in radius and 8.5Ω resistance, changes with time as shown in the figure. The magnetic field is perpendicular to the plane of the loop. Calculate the induced current in the loop and plot it as a function of time.




(c) Show that Lenz's law is a consequence of conservation of energy.

**OR**

(a) Describe, with the help of a suitable diagram, the working principleof a step-up transformer. Obtain the relation between input and outputvoltages in terms of the number of turns of primary and secondarywindings and the currents in the input and output circuits.
(b) Given the input current 15 A and the input voltage of 100 V for astep-up transformer having 90% efficiency, find the output power andthe voltage in the secondary if the output current is 3 A.

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# Atomic Energy Central School No.4, Rawatbhata

## Half Yearly Examination (2018-19)

**Time: 3 Hrs** **Class –XII, Chemistry** **Max. Marks: 70**

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***Note**: 1. Attempt all questions.*

*2. Questions 1 to 5 are 1mark each. Answer them in one word or one sentence.*

*3. Questions 6 to 12 are 2 marks each. Questions 13 to 24 are 3 mark each. Questions 25 to 27 are 5 marks each.*

*4. Use log table where it is needed.*

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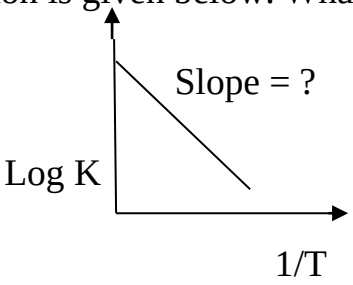
1.What is decimolar solution? 1

2. How many faraday of electric charge is needed to oxidise one mole of water into oxygen gas? 1

3. A plot of log K vs 1/T of Arrhenius equation is given below. What is slope of the curve?1

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4. Which of the following isomers o-Nitro phenol and p-Nitro phenol is more volatile and why? 1

5. Which of the two $CH_3CH=CHCH_2Br$ or $CH_3CH(Br)CH=CH_2$ is optically active? 1

6. i)What is coordination number of an atom in 2D hexagonal close packing?

ii) Write the type of magnetism observed when the magnetic moments are oppositively aliened and cancel out each other. 2

7. Silver crystallizes in fcc unit cell. Each side of the unit cell has an edge length of 409 pm. What is the radius of an atom of silver? 2

8. Define the term osmosis and osmotic pressure. What is the advantage of using osmotic pressure for the determination of molecular mass of solute in the solution? 2

9. How is molar conductivity related to concentration of solutions? How does conductivity of strong and weak electrolyte vary with concentration of solutions? 2

OR

Write anode, cathode and cell reactions taking place in dry cell.

10. What is hydro metallurgy? Explain with suitable example. 2

11. Write IUPAC name of: i) iso-Butyl alcohol ii) CHO-CHO 2

12. What is adsorption isotherm? Explain the effect of pressure on adsorption of gases on solid. 2

13. Give reasons: 3

i) phosphorous doped silicon is a semiconductor.

ii) Schottky defect lowers the density of solid.

iii) Zinc oxide is white, turns yellow on heating.

14. Non-ideal solutions exhibit either positive or negative deviations from Raoult's law. What are these deviations and why are they so called? Explain with an example of each type. 3

15. The chemistry of corrosion of iron is essentially an electrochemical phenomenon. Explain the process with chemical reactions occurring during the corrosion of iron in the atmosphere. How is chemical protection of iron from rusting effectively working? 3

16. Calculate the standard cell potential of the galvanic cell in which the following reaction takes place: $2Cr + 3Cd^{2+} \rightarrow 2Cr^{3+} + 3Cd$

Given that $E^0_{Cd2+/Cd} = 0.40V$ and $E^0_{Cr3+/Cr} = 0.74V$. Also calculate $\Delta rG^0$ value for the reaction. 3

17. i)What is rate determining step in a chemical reaction?

ii) For a reaction $NO_2 + CO \rightarrow NO + CO_2$ , the rate law is, rate = $k [NO_2]^2$. Write mechanism of the reaction. 3

18. Write about the following: 3

i) Multimolecular colloids ii) Bredig's arc method iii) Electrophoresis

19. Write about following processes in extraction of metals: 3

i) Smelting ii) Calcination iii) Van Arkel method

OR

i) Name the method and explain the refining of nickel.

ii) What is the role of depressant in froth floatation process?

iii)What is the role of lime stone in extraction of iron?

20. Write about the following name reactions: 3

i) Sandmayer's reaction ii) Aldol condensation iii) Reimer-Tiemann reaction

21. Complete the following reactions: 3

i) $CH_3CH_2Br + KNO_2 \rightarrow$ ?

ii) $RCH_2OH \xrightarrow[2573K]{Cu} ?$

iii) $CH_3COCH_3 \xrightarrow{LiAlH4} ?$

22. Give chemical test to distinguish the following pairs of compounds: 3

i) 1-Proponal and 2-Proponal ii) Phenol and cyclohexanol iii) Acetaldehyde and acetone

23. Write chemical reaction to bring out the fallowing conversions: 3

i) 2-Proponal into 2-Methyl-2-proponol ii) Cumene into phenol

iii) 2-Bromo propane into 1-Bromo propane

24.Give reasons: 3

i) Haloarenes are less reactive than haloalakanes

ii) Phenol is more acidic than ethanol

iii) Aldehydes are more reactive than ketones towards nucleophiles

25. a)Define the following terms: i) Vant's Hoff factor. ii) Kohlrausch's law

b) A solution of glycerol ($C_3H_8O_3$) in water was prepared by dissolving some glycerol in 500 g of water. The solution has boiling point of $100.4^0$C. What mass of glycerol was dissolved to make this solution? $k_b$= 0.52K/m (2+3)

OR

a) Define the following terms: i) Mole fraction ii) Colligative properties

b) 15.0g of an unknown material is dissolved in 450g of water. The solution freezes at -0.34$^0$C. Calculate molar mass of solute. $k_f$ = 1.86 K/m

26.a) Define the following terms: i) Activation energy ii) Order of reaction

b) The decomposition of sulphuril chloride, $SO_2Cl_2$ into $SO_2$ and $Cl_2$ is a first order reaction whose half life is 30 minutes. What percentage of reactant will be decomposed in 2 hrs? (2+3)

OR

a Define the following terms: i) Activated complex ii) Molecularity of reaction

b) The rate constants of a reaction at 700K and 760K are 0.011 and 0.105 $s^{-1}$ respectively. Calculate activation energy for the reaction.

27. a) A and B are two functional isomers having molecular formula $C_3H_6O$. On heating with NaOH and $I_2$, Isomer A forms yellow ppt where as isomer B does not. Write the formula of A and B. Write the chemical reaction involved.

b) A compound A with molecular formula $C_5H_{12}O$ on oxidation forms compound B with molecular formula $C_5H_{10}O$. The compound B gives iodoform test but does not reduce Tollen's reagent. Compound B on reduction with amalgamated zinc and HCl to give compound C with molecular formula $C_5H_{12}$. Identify A,B and C and write chemical equations involved. (2+3)

OR

a)i) Arrange the following in increasing order of their boiling point:

$CH_3CH_2OH$, $CH_3COCH_3$ and $CH_3COOH$

ii) Arrange the following in increasing order of their reactivity towards nucleophiles:

$CH_3CHO$, $C_6H_5CHO$ and HCHO.

B) An ether A with molecular formula $C_5H_{12}O$ when heated with excess of HI to produce two different alkyl halides, which on hydrolysis to form compounds B and C. Compound B on oxidation gives acetic acid where as C on oxidation gives acetone, Identify A, B and C and write chemical reactions involved.

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ATOMIC ENERGY CENTRAL SCHOOL NO.4, RAWATBHATA

HALF YEARLY EXAMINATION (2018-19)

Time: 3hour Class: XII , Mathematics Maximum Marks:100

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Name of Student_____Roll No. ___Class& Sec____Invg. Sign.___

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**Section- A** **4 x 1 = 4**

1. If the mapping f and g are given by f={(1,2), (3,5), (4,1)} and g={(2,3), (5,1), (1,3)} then write fog.
2. Find the principal value of $tan^{-1}\sqrt{3} - sec^{-1}(-2)$
3. Evaluate $\int \frac{sinx}{1+cos^2x}\,dx$
4. Find the slope of tangent to the curve $y = 3x^4 - 4x$ at x=4.

**Section –B** **2 x 8 = 16**

5. $tan^{-1}\sqrt{x} = \frac{1}{2}cos^{-1}\left(\frac{1-x}{1+x}\right)$, $x \in (0,1)$
6. If f(x) is invertible function, then find the inverse of $f(x) = \frac{3x-2}{5}$.
7. If A=$\begin{bmatrix}1 & 2\\ 4 & 2\end{bmatrix}$, then find the value of k if $|2A| = k|A|$.
8. Use differentials to approximate value of $\sqrt{49.5}$
9. If $If\ y = sin^{-1}x$, Show that $(1-x^2)\frac{d^2x}{dx^2} - \frac{xdy}{dx} = 0$
10. If $\int e^x(tanx+1)secxdx = e^x f(x) + c$. Write f(x) satisfying the above.
11. If $A^T = \begin{bmatrix}3 & 4\\ -1 & 2\\ 0 & 1\end{bmatrix}$ and B=$\begin{bmatrix}-1 & 2 & 1\\ 1 & 2 & 3\end{bmatrix}$ find $A^T - B^T$.
12. Find $\int_{-\pi/4}^{\pi/4} sin^2x dx$

**Section-C** **11 x 4 = 44**

13. Let A = R-{3} and B= R-{1}. Consider the function f: A→B defined by $f(x) = \frac{x-2}{x-3}$

    Show that f is one one and onto and hence find $f^{-1}$.
14. If $A = \begin{bmatrix}cos\theta & sin\theta\\ -sin\theta & cos\theta\end{bmatrix}$ then prove that $A^n = \begin{bmatrix}cosn\theta & sinn\theta\\ -sinn\theta & cosn\theta\end{bmatrix}, n \in N$
15. Show that $\begin{vmatrix}x+1 & x+2 & x+a\\ x+2 & x+3 & x+b\\ x+3 & x+4 & x+c\end{vmatrix} = 0$ where a,b,c are in A.P.
16. Solve $tan^{-1}(x-1) + tan^{-1}x + tan^{-1}(x+1) = tan^{-1}3x$
17. For what value of k, the following function is continuos at x=0?

f(x)=$\begin{cases}\frac{1-\cos 4x}{3x^2}, & x \neq 0\\ k & x = 0\end{cases}$

**Or**

Show that the function $f(x) = 2x - |x|$ is continuous but not differentiable at x=0.

18. Differentiate $tan^{-1}\frac{x}{\sqrt{1-x^2}}$ w..r.t. $sin^{-1}(2x\sqrt{1-x^2})$

19. Verify Lagranges mean value theorem for the function $f(x) = x + \frac{1}{x}$ in [1,3]

20. Evaluate $\int e^x \left(\frac{sin4x-4}{1-cos4x}\right) dx$

**Or**

$\int xsin^{-1}xdx$

21. Evaluate $\int_0^{\pi} \frac{x\, sinx}{1+cos^2x} dx$

22. Find the equation of tangent to the curve $x = sin3t, y = cos2t$ at $t = \frac{\pi}{4}$

**Or**

Find the intervals in which the function f given by $f(x) = x^3 + \frac{1}{x^3}, x \neq 0$ is

i) increasing ii)decreasing

23. If cosy = x cos (a+y), with cos a$\neq \pm 1$ then prove that $\frac{dy}{dx} = \frac{cos^2(a+y)}{sina}$

**Section –D** **6 x 6 = 36**

24. If $A^{-1} = \begin{bmatrix} 3 & -1 & 1 \\ -15 & 6 & -5 \\ 5 & -2 & 2 \end{bmatrix}$ and $B = \begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$ Find $(AB)^{-1}$

**Or**

Find the inverse of following matrix using elementary transformations $A = \begin{bmatrix} 1 & 2 & -2 \\ -1 & 3 & 0 \\ 0 & -2 & 1 \end{bmatrix}$

25. Using properties prove that $\begin{vmatrix} 3a & -a+b & -a+c \\ a-b & 3b & c-b \\ a-c & b-c & 3c \end{vmatrix} = 3(a+b+c)(ab+bc+ca)$

26. Of all closed right circular cylindrical cans of volume $128\pi cm^3$, find the dimensions of can which has minimum surface area.

Or

A square piece of tin of side 18cm is to be made into a box without top by cutting a square from each corner and folding up the flaps to form a box. Find the max. volume of box.

27. Evaluate $\int \frac{5x+3}{\sqrt{x^2+4x+10}} dx$

28. Consider the binary operation$*: R \times R \to R$ and $o: R \times R \to R$ as $a * b = |a-b|$ and $aob = a \forall a, b \in R$. Show that '$*$' is commutative but not associative, 'o' is associative but not commutative.

29. (i) Find $\frac{dy}{dx}$ if $y = cos^{-1}\left(\frac{2^{x+1}}{1+4^x}\right)$ (ii) Differentiate w.r.t $x$ $y = (sinx)^x + (x)^{sinx}$

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ATOMIC ENERGY CENTRAL SCHOOL No 4 RAWATBHATA

Half Yearly Examination (2018-19)

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

Name of the student_____Roll No._____Class Sec_____Invig. Sign._____

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. What are interferans?
2. AaBb was crossed with aabb. What would be the phenotype ratio of progeny? Mention the term to denote this kind of crosses.
3. Expand; (i) MTP, (ii) ET
4. Write the term for unidirection flow of information in:

   DNA transcription mRNA translarion Protein
5. Explain what is meant by metastasis.

SECTION 'B'

6. Write the Oparin and Haldane hypothesis with reference to origin of life.
7. Why protein syntheses from *Spirulina* are are called single cell protein?
8. Differentiate between a template strand and coding strand of DNA.
9. Answer the followign:

   a. Name the stage of plasmodium that gains entry into the human body.

   b. Explain the cause of periodic recurrence of chill and high fever during malaria attack in human.
10. Name the primary and secondry lymphoid organs.

OR

Why do we call embryo sac monosporic?

11. What is the medical term for abortion? Which is the period considered as safe period for abortion?
12. What prevention may be taken to avoid pregnancy?

SECTION 'C'

13. Differentiate between the genetic code given below:

(a) Unambiguous and Universal (b)Degenerate andInitiator

14. What is triple fusion? Where and how does it take place? Name the nuclei involved in triple fusion.
15. What is mean by semi-conservative nature of DNA replication? Explain.
16. A woman has certain queries as listed below, before starting with contraceptive pills. Answer them.
    (i) What do contraceptive pills contain, and how do they act as contraceptives?
    (ii) What schedule should be followed for taking these pills?
17. Distinguish between asexual and sexual reproduction. Why vegetative reproduction is also considered as a type of asexual reproduction?

OR

Why the Human Genome Project is called a mega project?

18. Explain what is meant by biofortification? Write various mean for biofortification.
19. Write any three varieties develop for disease resistance for various crop.
20. Draw the labeled diagram of an antibody molecule.
21. How does the transmission of each of the following diseases take place?

(a) Amoebiasis (b) Malaria (c) Ascariasis (d) Pneumonia (e) AIDS (f) Typhoid

22. What is meant by term 'breed'? What are objectives of animal breeding?
23. What is sewage? In which way can sewage be harmful to us? Explain the process of sewage treatment.
24. Explain briefly: (a) PCR (b) Restriction enzymes and DNA (c) Chitinase

SECTION 'D'

25. In the medium where E.coli was growing, lactose was added, which induced the lac operon. Then why lac opoeron shut down some time after addition of lactose in the medium. Explain whit the help of diagram also.

OR

Mention any two autosomal genetic disorders with their symptoms.

26. Write five preventive and control of alcohol and drugs abuse among adolescence.

OR

(a) Find out the name of microbes from which Cyclosporin A (an immunosuppessive drug) and Statins (blood cholesterol lowering agnets are obtained.

(b) How is a canerous cell different from a normal cell?

27. (a) Differentiate between: (i) Hypocotyl and epicotyls (ii) Coleoptile and coleorhizae
    (iii) Integument and testa.
    (b) What is mean by emasculation? When and why does a plant breeder employ this technique?

OR

(a) (i) Why are mosses and liverworts unable to complete their sexual mode of reproduction in dry condition?
    (ii) Name the vegetative progagules in the grasses and mints.

(b) What is menstrual cycle? Which hormones regulate menstrual cycle?

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# Atomic Energy Central School No.4, Rawatbhata

## Half Yearly Examination (2018-19)

Time : 3 Hr. Class : XII ,Computer Science Max. Marks : 70.

Name of the student_____Roll No._____Class Sec_____Invig. Sign._____

Note : i) ALL the questions are compulsory.

ii) The programming language is C++.

iii) Assume necessary header files are included for the output of program segments.

1. a) With a suitable C++ code, distinguish between call by value and call by reference used in user defined functions. 2

b) Name the header files that shall be needed for executing the following code. 2

```
void main()
{
        char s[80];
        gets(s);
        cou<<"Length="<< setw(4)<< strlen(s);
}
```

c) Rewrite the following program after removing the syntactical error(s), if any. Underline the each correction. 2

```
#include <iostream.h>
void main()
{
   struct TV
  {
    char Make[ ]="Samsung";
    long Price;
    char TVtype[10];
```

```
};
New TV;
gets(New.Make);
gets(New.TVtype);
Ex = New;
cout << Ex.Make<<","
     << Ex.TVtype<<","
     <<Ex.Price;
}
```

d) Find the output of the following program segment. 2

```
#define MOD(A)  (A%3==0 ? A+3 : A–3)
void main()
{
    int P[ ] = {10, 18, 27, 38, 46, 57};

    for(int C=5; C>=0; C – –)
      cout<<MOD(P[C])<<"#";
  cout<<endl;
}
```

e) Find correct possible output(s) from the following options (i) to (iv). Also find minimum values assigned with the variable LOC. Assume that suitable header files are included.

1+1

```
void main()
{
   randomize();
    char Place[ ][15]={"SOUTH"," NORTH","WEST", "EAST"};
```

```
for(int I=1;I<=3;I++)
{
    int LOC = random(I) +1;
        cout << Place [LOC]<<"%"
}
}
```

(i) NORTH% WEST% EAST%

(ii) SOUTH%EAST% WEST%

(iii) NORTH% WEST% SOUTH %

(iv) NORTH% WEST% NORTH%

f) Find the output of the following program. 3

```
void Direct(int T=18)
{   for(int S=1;S<=T;S+=5)
        cout<<S<<"&";
    cout<<endl;
}
void Indirect(int &P)
{   P+=15;
    Direct(P);
}
void main()
{
    int Q=10;
    Indirect(Q);
    Direct();
    cout<<"New Value="<<Q<<endl;
}
```

g) Find the output of the following program segment. 2

```
void main()
{  int a[ ] = {2,3,5,7,9,10};
    int *pt = a;
    int x = *pt++;          cout<<x<<endl;
```

```
        x = *pt;            cout<<x<<endl;

        x = *++pt;          cout<<x<<endl;

        x = ++*pt;          cout<<x<<endl;

    }
```

2. a) With a suitable C++ code distinguish between protected and private visibility modes used in inheritance 2

b) Answer the questions (i) to (iii) after going through the following class. 3

```
class Online
{       int OnId; char OnType;
      public:
       ~Online ();          // F1
         Online ();                 //F2


         Online (Online &O)     // F3
        Online(int Od);         //F4
};
void main()
{       Online OL(50); //Statement-1
        Online OE=OL; //Statement-2
  }
```

(i) Which function out of F1, F2, F3, or F4 will get executed when Statement-1 is executed in the above code?

(ii) Which function out of F1, F2, F3, or F4 will get executed when Statement-2 is executed? Is it as constructor or destructor or copy constructor?

(iii) Name the feature of the class illustrated by functions F1 and F2. When will they be invoked?

c) Define a class **NTSE** in C++ with following description. 4

**Private members:**

CNo of type long, Type of type character, Dist of type integer, PKM of type integer,

**Public members**

- A constructor to intialise Type as 'N" and PKM as 0

- A function Charges() to compute PKM as follows.

  Type PKM

  . 'A' 12

  'B' 16

  'C' 20

- A function Booking() to accept values for CNo, Type, Dist and call the function Charges() to compute PKM.
- A function Visit() to display CNo, Type, Dist and PKM*Dist on the screen.

d) Answer the questions (i) to (v) based on the following: 5

```
class Campus
{           int Cid          char City[25];
      protected:
          char Country[15];
      public:
          Campus ();
          void Apply();    void Confirm();
};
class Dept: protected Campus
{         long DeptNo;    char HOD[20];
    protected:
          double Budget;
      public:
          Dept();
      void Enter();          void Show();
};
class Registration:  private  Dept
{     long RegNo;       char  Name[30];
      public:
```

```
        Registration();

        long MobileNo;;

        void Enrol();     void View();

    };
```

(i) Name the type of inheritance used in the above code.

(ii) Name all the members directly accessed by the objects of the class Registration.

(iii) Is it possible to access directly the member function Confirm() by the object of the class Dept? Justify your answer.

(iv) Name all the data members directly accessed by the member functions of the class Dept.

(v) Name the order in which constructors are called when objects of the class Registration is created.

3. a) An array of X[40][30] of type long is stored in the memory along the row. Find out address of memory location of an element X[10][15], if the element X[25][20] is stored at the memory location 26000. 3

b) Write a function ShowArray(int B[ ], int N) in C++ to accept a 1D array of integers and its size of type integer as parameters and display square of the array element if it is even and cube of the array element if it is odd, as shown below. 3

**Input:** 4, 5, 7, 8, 10, 3

**Output:** 16, 125, 343, 64, 100, 27

c) Write function void AltSum(int P[ ][3], int N) in C++ to accept a 2-D integer array and display alternate array elements as shown below. 2

**If the array is**

**2 5 7**

**3 4 6**

**9 11 12**

**Then output will be**

**2 7 4 9 12**

d) An array P[15][10] is stored along the column in the memory with each element

requiring 4 bytes of storage. If the base address of array P is 1400, find out the location of P[8][5] 2

e)
```
#include<iostream.h>
void printing(char c='*', int l=40)
{for(int x=0;x<l;x++)
cout<<c;
cout<<endl;
}
```

How will you invoke the function printing for the following output

a. to print '*' 40 times
b. to print '+' 30 times 2

f) Write an algorithm with two modules and headers to insert and delete an element in a one dimensional array having N elements. 3

g) Write a complete C++ program using function to search for a particular number in a one dimensional array, which is sorted in ascending order, using binary search teachnique. 4

4. a) Observe the program segment given below carefully and write statements 1 and 2 using the fstream functions tellg(), tellp(), seekg(), seekp() or write(). 2

```
class Hospital
{
        long  PNo;
        char  PName[25], MobileNo[12];
    public:
        void Enter();// To enter details
        void Show();//To display details
         long RPNo()
         {  return PNo; }
        void ChangeMobile()
```

```
                { cout<<Enter MobileNo"; gets(MobileNo);          }
};
void Modify()
{
    Hospital H;                    fstream F;
    F.open("REG.DAT",ios::binary | ios::in | ios::out);
    int URPNo, Change=0;
    cout<<"Enter your URPNo ";  cin>>URPNo;
     while(!Change&&F.read((char *)&H, sizeof(H)))
      If (URPNo== H.RPNo()
      {
          _____// Statement-1
           //To call the function to change the MobileNo
    _____ // Statement-2
    //To move file pointer to the beginning of the modified object.
           F.write((char *)&H, sizeof(H));
           Change++;
      }
    F.close();
}
```

b) Write a C++ function WORD_COUNT() to read the text file BOOK.TXT and count and display number of times words "is" and "was" are used in it. 2

c) Write a C++ function COPY_LINE() to read each line from the file UNARY.TXT and copy those lines starting with letters 'A' or 'E' into another file BINARY.TXT. 2

d) Assume that a binary file "AREA.DAT" consists of objects of the class AREA, where the class is as shown below. 3

```
class AREA
{     int ANo;
      char  AName[25], ArCode;
  public:
        void Enter(); // To read objects
        void Show();// To show objects
        int GetArCode()
        {          return ArCode;          }
};
```

Write a C++ function to read all the objects from the binary file AREA.DAT and count and display number of objects whose ArCode is 'R' or 'B'.

e) Assume that a binary file "AIR.DAT" consists of objects of the class Flight, where the class is as shown below. 3

```
class  Flight
{    char FNo[10];, FName[25];
    char *Boarding, *Destination ;
 public:
    void InputObj();       // To read objects
    void DisplayObj();    // To display objects
    char *RBrd  ()
     {  return Boarding   }
};
```

Write a C++ function to read all the objects from the binary file "AIR.DAT" and display details of those objects whose Boarding is "Chennai"

6. a) What is a copy constructor? Give an example in C++ to illustrate copy constructor 2

b) Explain the following file manipulation commands with syntax and example 4

a. ios::binary b. read c. eof() d. fstream

c) Explain this pointer and void pointer with examples for each. 2

d) Write a function in c++ which accepts an integer array and its size as parameters and rearrange the array in reverse order

If an array contains the elements as: 4, 2, 5, 1, 6, 7, 8, 12, 10

Then the function should rearrange the array as: 10, 12, 8, 7, 6, 1, 5, 2, 4 2

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# ATOMIC ENERGY CENTRAL SCHOOL NO.4,RAWATBHATA

Half Yearly Examination (2018-19)

Time :3hrs Class XII, Physical Education M.M:70

Name of the student_____Roll No._____Class Sec_____Invig. Sign._____

Instructions: 1. The word limit for the questions carrying 1 marks is approximately 10-20 words.

2. The word limit for the questions carrying 3 marks is approximately 30-50 words.

3. The word limit for the questions carrying 5 marks is approximately 75-100 words.

QUESTIONS

| | | |
|---|---|---|
| Q.1.What do you mean by Cardiac Output? | 1 | |
| Q.2.Write the dimension of the Platform in Harvard Step test. | | 1 |
| Q.3.Name the location and artery on the body from where Pulse rate can be noted. | 1 | |
| Q.4.Explain the type of Motor development. | 1 | |
| Q.5.What is food myths? | 1 | |
| Q.6.What is Menarche? | | 1 |
| Q.7.Name any four types of Disability. | | 1 |
| Q.8.Write anyone asana recommended for Hypertension and Asthma. | | 1 |
| Q.9.What do you mean by Non-Nutritive component of Diet? | | 1 |
| Q.10. Differentiate between Disability and Disorder. | | 1 |
| Q.11.Write the full form of AAPHER. | | 1 |
| Q.12.Explain the benefits of Asana. | 3 | |
| Q.13.Explain the causes and Corrective measures of Scoliosis. | | 3 |
| Q.14.What are the advantages of Correct Posture? | 3 | |
| Q.15.What do you mean by Menstrual dysfunction ? | | 3 |
| Q.16.Explain the causes of Disability. | | 3 |
| Q.17.Give three Physiological differences between male and female. | | 3 |
| Q.18.List down the names of test suggested by Rikli and Jones. | | 3 |
| Q.19.Describe any three types of Tournaments. | | 3 |
| Q.20.Explain the causes that lead to Postural deformities in individuals. | | 5 |
| Q.21.Write briefly on ‘Female athlete triad”. | 5 | |
| Q.22.What are the effects of regular exercises on Cardiovascular system? | 5 | |
| Q.23.Describe in brief the procedure for conducting Barrow three item general motor ability test. | | 5 |
| Q.24.What is Sports Nutrition? Write its effects and role on Sports performance. | | 5 |
| Q.25.Describe the causes, symptoms and management of Oppositional Defiant disorder. | | 5 |
| Q.26.Explain the different types of Committees responsible for Organizing a tournament. | 5 | |

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परमाणु ऊर्जा केन्द्रीय विद्यालय ,क्रमांक- 4 रावतभाटा

अर्द्धवार्षिक परीक्षा (2018-19)

पूर्णांक : 80 कक्षा : बारहवीं , हिंदी (केन्द्रिक) समय: 3 घंटे

खंड (क)

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

तुम्हें क्या करना चाहिए , इसका ठीक -ठीक उत्तर तुम्हीं को देना होगा , दूसरा कोई नहीं दे सकता। कैसा भी विश्वासपात्र मित्र हो ,तुम्हारे उस काम को वह अपने ऊपर नहीं ले सकता। हम अनुभवी लोगों की बातों को आदर के साथ सुनें ,बुद्धिमानों की सलाह को मानें, पर इस बात को निश्चित समझ कर कि हमारे कामों से ही हमारी रक्षा व हमारा पतन होगा , हमें अपने विचार और निर्णय की स्वतंत्रता को दृढ़तापूर्वक बनाए रखना चाहिए। जिस पुरुष की दृष्टि सदा नीची रहती है ,उसका सिर कभी ऊपर न होगा। नीची दृष्टि रखने से यद्यपि रास्ते पर रहेंगे ,पर इस बात को न देखेंगे कि यह रास्ता कहाँ ले जाता है। चित्त की स्वतंत्रता का मतलब चेष्टा की कठोरता या प्रकृति की उग्रता नहीं है। अपने व्यवहार में कोमल रहो और अपने उददेश्यों को उच्च रखो ,इस प्रकार उच्चाशय और नम्र दोनों बनो। अपने मन को कभी मरा हुआ न रखो । जो मनुष्य अपना लक्ष्य जितना ऊपर रखता है, उतना ही उसका तीर ऊपर जाता है।

संसार में ऐसे-ऐसे दृढ़ चित्त मनुष्य हुए हैं ,जिन्होने मरते दम तक सत्य की टेक नहीं छोड़ी, अपनी आत्मा के विरुद्ध कोई काम नहीं किया ।महाराणा प्रतापसिंह जंगल-जंगल मारे-मारे फिरते थे ,अ पनी स्त्री और बच्चों को भूख से तड़पते देखते थे परंतु उन्होंने उन लोगों की बात नहीं मानी जिन्होंने उन्हें अधीनतापूर्वक जीते रहने की सम्मति दी, क्योंकि वे जानते थे कि अपनी मर्यादा की चिंता अपने को हो सकती है,उतनी दूसरे को नहीं। जो युवा पुरुष सब बातों में दूसरों का सहारा चाहते हैं, जो सदा एक-न-एक अगुआ ढूँढ़ा करते हैं और उनके अनुयायी बना करते हैं,वे आत्मसंस्कार के कार्य में उन्नति नहीं कर सकते ।उन्हें स्वयं विचार करना ,अपनी सम्मति आप स्थिर करना , दूसरों की उचित बातों का मूल्य समझते हुए भी उनका अंधाभक्त न होना सीखना चाहिए। तुलसीदास जी को लोक में इतनी सर्वप्रियता और कीर्ति प्राप्त हुई , उनका दीर्घ जीवन इतना महत्त्वमय और शांतिमय रहा, सब इसी मानसिक स्वतंत्रता, निर्द्वंद्वता और आत्मनिर्भरता के कारण।वहीं उनके समकालीन केशवदास को देखिए जो जीवन भर विलासी राजाओं के हाथ की कठपुतली बने रहे, जिन्होनें आत्म स्वतंत्रता की ओर कम ध्यान दिया और अंत में आप अपनी बुरी गति की।

क) महाराणा प्रताप ने गुलामी स्वीकार करने की सलाह क्यों नहीं मानी ? 2

ख) किसका तीर ऊपर जाता है और क्यों ? 2

ग) कौन आत्मसंस्कार के कार्य में उन्नति नहीं कर सकते ? 2

घ) लेखक नीची दृष्टि न रखने की सलाह क्यों देता है ? 2

ड) कवि तुलसीदास को कीर्ति क्यों मिली ? 2

च) "टेक छोड़ना"मुहावरे का प्रयोग करते हुए एक वाक्य बनाइए। 1

छ) "चेष्टा" शब्द के दो पर्याय लिखिए। 1

प्र० 2 निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर दीजिए। 1x4=4

फिर से नहीं आता समय ,जो एक बार चला गया ,
जग में कहो बाधा-रहित कब कौन काम हुआ भला ।ह
"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 , दढ़ 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 आहवान 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 आहवान करती है और क्यों ? घ) 'धरणि-सुत 'किसे कहा गया है ? वह कैसे विजय प्राप्त करता है ?

खण्ड - (ख)

प्र० 3 निम्नलिखित में से किसी एक विषय पर एक अनुच्छेद लिखिए । 5

क) प्राकृतिक आपदाएँ और हमारी वैज्ञानिक प्रगति ख) मजहब नहीं सिखाता आपस में वैर रखना
ग) संचार - क्रांति और भारत घ) छात्र और अनुशासन

प्र० 4 वर्षा के बाद सड़कों और नालों की दुर्दशा और जनता की परेशानियों की ओर की ध्यान आकर्षित हुए जिला अधिकारी को पत्र लिखिए | 5

अथवा

किसी प्रमुख समाचार पत्र के संपादक को पत्र लिख कर गाँव में चिकित्सा –सुविधाओं के अभाव का उल्लेख कीजिए और कुछ गाँवों के बीच विशेष चिकित्सा –सुविधाओं वाले अस्पताल खोलने का सुझाव दीजिए |

प्र० 5 निम्नलिखित प्रश्नों के संक्षिप्त उत्तर लिखिए । 1x4 =4

क)संवाददाता किसे कहते है ? ख)समाचार में शीर्षक क्या महत्त्व है ?
ग)संपादकीय किसे कहते हैं ? घ) फीचर 'की दो विशेषताएँ बताइए |

प्र० 6 'हताशा में आशा की किरण युवा ' अथवा 'आँखों देखी दुर्घटना ' विषय पर एक फीचर लिखिए | 3
प्र० 7 'केरल में बाढ़ की विभीषिका 'अथवा 'विश्व में बढ़ता आतंकवाद 'विषय पर एक आलेख लिखिए | 3

खण्ड - (ग )

प्र० 8 निम्नलिखित पद्यांश को पढ़कर पूछे गए प्रश्नों उत्तर दीजिए । 2x3 =6

जाने क्या रिश्ता है , जाने क्या नाता है
जितना भी उड़ेलता हूँ ,भर भर फिर आता है ,
दिल में क्या झरना है ?
मीठे पानी का सोता है
भीतर वह ,ऊपर तुम
मुसकाता चाँद ज्यों धरती पर रात -भर
मुझ पर त्यों तुम्हारा ही खिलता वह चेहरा है !

क) कवि को अपने दिल में एक झरना क्यों प्रतीत होता है ?
ख) कवि प्रिया को अपने जीवन में किस प्रकार अनुभव करता है ?
ग) कवि की श्रंगार भावना पर प्रकाश ड़ालिए ।

अथवा

बच्चे प्रत्याशा में होंगे

नीड़ों से झाँक रहे होंगे –
यह ध्यान परों में चिड़ियों के भरता कितनी चंचलता है !
दिन जल्दी –जल्दी ढलता है |
मुझसे मिलने को कौन विकल ?
मैं होऊं किसके हित चंचल ?
यह प्रश्न शिथिल करता पद को ,भरता उर में विह्वलता है |
दिन जल्दी –जल्दी ढलता है |

क) दिन ढलते समय पक्षियों की द्रुत गति का कारण कवि क्या मानता है ?
ख) आदमी को घर लौटने की खास जल्दी नहीं दिखाई पड़ती,क्यों ?
ग) भाव स्पष्ट कीजिए –'यह प्रश्न शिथिल करता पद को ,भरता उर में विह्वलता है'|

प्र० 9 निम्नलिखित में से किसी एक पद्यांश को पढ़कर पूछे गए प्रश्नों के उत्तर लिखिए । 2x2=4

प्रात नभ था बहुत नीला शंख जैसे
भोर का नभ
राख से लीपा हुआ चौका
(अभी गीला पड़ा है )
बहुत काली सिल ज़रा से लाल केसर से
कि जैसे धुल गई हो
स्लेट पर या लाल खड़िया चाक
मल दी हो किसी ने
नील जल में या किसी की
गौर झिलमिल देह
जैसे हिल रही हो ।
और.....
जादू टूटता है इस उषा का अब
सूर्योदय हो रहा है ।

क) काव्यांश की भाषागत विशेषताएँ बताइए । ख)इस पद्यांश का भाव सौंदर्य स्पष्ट कीजिए

अथवा

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) इस काव्यांश का मुख्य संदेश स्पष्ट कीजिए । ख) उपर्युक्त पद्यांश के काव्य -सौंदर्य पर प्रकाश ड़ालिए ।

प्र० 10 निम्नलिखित प्रश्नों में से किन्हीं दो प्रश्नो के उत्तर लिखिए । 3x2 =6

क) 'हम समर्थ शक्तिवान और हम एक दुर्बल को लाएँगे 'पंक्ति के माध्यम से कवि ने क्या व्यंग्य किया है?
ख) पतंगों के साथ साथ वे भी उड़ रहे हैं –बच्चों का उड़ान से कैसा संबंध बनता है ?
ग) 'कविता के बहाने ' कविता के आधार पर कविता के असीमित अस्तित्व को स्पष्ट कीजिए |

प्र० 11 निम्नलिखित में से किसी एक गद्यांश को पढ़कर पूछे गए प्रश्नों उत्तर दीजिए । 2x3 =6

रात्रि की विभीषिका को सिर्फ़ पहलवान की ढोलक ही ललकार कर चुनौती देती रहती थी । पहलवान संध्या से सुबह तक चाहे जिस ख्याल से ढोलक बजाता हो ,किन्तु गाँव के अर्द्ध मृत, औषधि - उपचार- पथ्य -विहीन प्राणियों में वह संजीवनी शक्ति ही भरती थी। बूढ़े-बच्चे जवानों की शक्तिहीन आँखों के आगे दंगल का दृश्य नाचने लगता था। स्पंदन-शक्ति-शून्य स्नायुओं में भी बिजली दौड़ जाती थी । अवश्य ही ढोलक की आवाज में न तो बुखार हटाने का कोई गुण था और न

महामारी की सर्वनाश शक्ति को रोकने की शक्ति ही ,पर संदेह नहीं कि मरते हुए प्राणियों को आँख मूंदते समय कोई तकलीफ़ नहीं होती थी ,मत्यु से वे डरते नहीं थे ।

क) इस गद्यांश में रात्रि की किस विभीषिका की चर्चा की गई है ?

ख) किस प्रकार के व्यक्तियों को ढोलक से राहत मिलती थी ?

ग) दंगल का दृश्य लोगों पर किस प्रकार का प्रभाव ड़ालता था ?

अथवा

हम आज देश के लिए करते क्या हैं ?माँगे हर क्षेत्र में बड़ी –बड़ी हैं , पर त्याग का कहीं नाम निशान नहीं है | अपना स्वार्थ आज एक मात्र लक्ष्य रह गया है | हम चटखारे लेकर इसके या उसके भ्रष्टाचार की बातें करते हैं ,पर क्या कभी हमने जाँचा है कि अपने स्तर पर अपने दायरे में हम उसी भ्रष्टाचारके अंग तो नहीं बन रहे हैं ? काले मेघा दल के दल उमड़ते हैं ,पानी झमाझम बरसता है पर गगरी फूटी की फूटी रह जाती है ,बैल प्यासे के प्यासे रह जाते हैं | आखिर कब बदलेगी यह स्थिति ?

क) देश के संदर्भ में माँग और त्याग का कैसा असंतुलन दिखाई पड़ता है ?

ख)आशय स्पष्ट कीजिए'पानी झमाझम बरसता है पर गगरी फूटी की फूटी रह जाती है बैल प्यासे के प्यासे रह जाते हैं |

ग) आपके विचार में यह स्थिति कब बदलेगी और कैसे बदलेगी ?

प्र० 12 निम्नलिखित प्रश्नों के उत्तर लिखिए ।

क) "भक्तिन" पाठ के आधार पर भक्तिन की चारित्रिक विशेषताओं पर प्रकाश डालिए | 3

ख) बाजारुपन'से क्या तात्पर्य है ? किस प्रकार के व्यक्ति बाजार को सार्थकता प्रदान करते हैं ? 3

ग)'काले मेघा पानी दे 'संस्मरण विज्ञान के सत्य पर सहज प्रेम की विजय का चित्र प्रस्तुत करता है–स्पष्ट कीजिए | 3

घ) 'पहलवान की ढोलक ' पाठ में पहलवान का क्या नाम है ? 1

प्र० 13 अपनी पाठ्य पुस्तक 'वितान भाग-दो' में संकलित पाठों के आधार पर पूछे गए किन्हीं दो प्रश्नों के उत्तर दीजिए |

2x4=8

क) यशोधर बाबू के बेटे अपने पिता के साथ पराएपन का व्यवहार क्यों करते थे ? 'सिल्वर वैडिंग 'पाठ के आधार पर स्पष्ट कीजिए|

ख) अतीत में दबे पाँव ' पाठ के आधार पर शीर्षक की सार्थकता स्पष्ट कीजिए |

ग) जूझ 'कहानी के आधार पर लेखक और उसके प्रिय शिक्षक के संबंधों पर प्रकाश डालिए |

प्र०14 निम्नलिखित निबंधात्मक प्रश्नों में से किसी एक प्रश्न का उत्तर दीजिए। 4

'जूझ' का नायक सचमुच एक संघर्षशील बालक है –सिद्ध कीजिए |

अथवा

'सिल्वर वैडिंग ' कहानी के आधार पर यशोधर बाबू के व्यक्तित्व की प्रमुख विशेषताओं पर प्रकाश डालिए|

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