D.A.V. Public School, Behror

Holiday Homework(Session 2024-25)

Class- XII Subject- English

1.The recent rain caused great havoc in the city and several trees got uprooted blocking traffic at several places. Write a report to be published.

2. Recently you went to your native village to visit your grandparents You saw that some of the children in the age group(5-14) in the 'The Bhilai Express'. You are Sanjay/Sanjana Sharma from 21, Vasant Marg, Bhilai. Draft a letter including a CV, applying for the advertised post

3.Write a report in 100-125 words on 'No Tobacco' campaign organized by your school in the academic session 2010-11. You are Deep/ Deepa, Cultural Secretary, Anupam Senior Secondary School, Meerut.

4.You are Pulkil/Prema, a staff reporter of The Times of India. You have been asked to cover an incident of daylight robbery on the outskirts of Delhi when the inmates were present in the house. Write a report in 100-125 words.

5.You are Ankit/Amrita, staying at 4 Pycrofts Road, Chennai. You have come across an advertisement in The Times of India for recruitment of computer engineer trainees by Shivam Software. Apply in response to this advertisement, giving your detailed bio-data (curriculum vitae). Invent all necessary details.

6.You are Rohan Khanna of 149 Circular Road, Panipat. Write an application to the Manager, D.A.V. Senior Secondary School, Panipat in response to an advertisement for the post of a music teacher in that school.

7.You are Barkha Madan of 37, Vasant Kunj, New Delhi. Your telephone connection is not functioning properly. Write a letter to the General Manager, Mahanagar Telephone Nigam, New Delhi complaining about the unsatisfactory working of your telephone and the problems caused to you.

8.You are Shilpa/Sameer living in Bangalore. You have just completed your studies and you are looking for a job. While browsing through The Hindustan Times of 23.05.2024, you come across the following advertisement. Choose a post for which you think you are suitable. Send your application in response to this advertisement.

9.Your friend is throwing a party to celebrate his success in board exams. Send a reply regretting your inability to attend the same due to a prior engagement.

10.You are Rahul and have been invited to the post selection party of your friend Anuj. Write a reply accepting the invitation you got.

11.You are Anuj / Anuja Goel of 23, Yojna Vihar, Delhi Write a an invitation to invite all your friends for the party you are giving to celebrate your selection in B-Tech in DTU.

12.You are Dr. Shailesh Gupta, an eminent educationist. You have been invited to preside over an Inter Zonal Declamation Competition by Neha, the President of English Literary Club of Government Model Sr. Sec. School Sector-19, Chandigarh. Write a letter for refusal of the invitation.

13.Questions for Practice

1 What does the title Lost Spring convey?

2. Why was Gandhi ji impressed with Rajkumar Shukla?

3. What could have been the poet's childhood fears?

4 Why did M.Hamel say about knowing one's language is a key to prison?

5. Whom did M.Hamel blame for not learning French?

6. Why did the peddler not reveal his true identity when the ironmaster mistakes him to be captain?

7. Explain the theme of the poem"Aunt Jennifer's Tigers".

8. Why are the young trees described as 'sprinting'?

9. What is the significance of the parting words of the poet and her smile in 'My Mother at Sixty-six'?

10. How did Kamala Das put away the thought of her mother's old age?

11. What is the exotic moment the poet Pablo Neruda wishes for?

12. According to the poet, what is it that human beings can learn from Nature?

13. Why is Pablo Neruda against 'total inactivity'?

14. Do you think the poet, Pablo Neruda advocates total inactivity and death? Why/ Why not?

15. Do you think the poet advocates total inactivity and death in the poem, 'Keeping Quiet'? Give reasons

16. How does stopping for a second help us, according to the poet, Pablo Neruda?

17. What is the exotic moment referred to in the poem, 'Keeping Quiet'? What makes it exotic?

19. What will happen to Aunt Jennifer's tigers when she is dead?

20. Make any 10 Thinking Based questions from "Deep Water and Indigo"

D.A.V. PUBLIC SCHOOL, BEHROR

CLASS XII BIOLOGY

HOLIDAY HOMEWORK 2024-25

CHAPTER-SEXUAL REPRODUCTION IN FLOWERING PLANTS

Q1 An anther with malfunctioning tapetum often fails to provide viable male gametophytes. Give one reason.

Q2 A bilobed , dithecous anther has 100 microspore mother cells per microsporangium. How many male gametophytes this anther can produce ?

Q3 Write the functions of coleoptiles and scutellum.

Q4 Papaver and Michelia both have multicarpellary ovaries. How do they differ from each other ?

Q5 Mention one application of pollen bank. How are pollens stored in a bank ?

Q6 Mention the pollinating agents of an inflorescence of small dull coloured flowers with well exposed stamens and large feathery stigma. Give any one characterstics of pollen grains produced by such flowers.

Q7 Name the type of flowers which favours cross pollination.

Q8 The following statements seems to describe the water pollinated submerged plants. Which one of these statements is incorrect :

i) The flower do not produce nectar

ii) The pollen grains have mucilaginous covering

iii) The brightly colored female flowers have long stalk to reach the surface

Q9 Name the type of pollination as a result of which genetically different types of pollen grains of the same species land on the stigma.

Q10 Why are non albuminous seeds so called?

Q11 How do flowers of *Vallisneria* get pollinated ?

Q12 How is it possible in *Oxalis* and *Viola* plants to produce assured seed sets even in the absence of pollinators ?

Q13 Normally one embryo develops in one seed but when an orange seed is squeezed many embryos of different shapes and sizes are seen . Mention how it has happened.

Q14 How many pollen grains and ovules are likely to be formed in the anther and the ovary of an angiosperm bearing 25 microspore mother cells and 25 megaspore mother cells respectively.

Q15 How many microspore mother cells would be required to produce one hundred pollen grains in a pollen sac ? and Why?

Q16 How many microsporangia are present in typical anther of an angiosperm?

Q17 Draw a diagram of a male gametophyte of angiosperm. Label any four parts. Why is sporopollenin considered the most resisitant organic material?

Q18 Draw a diagram of anatropous ovule of an angiosperm and label the following parts .

a) That develop into seed coat

b) That develop into embryo after fertilization

c) That develop into an endosperm in an albuminous seeds

d) Through which pollen tube gain entry into the embryo sac

e) That attaches the ovule to the placenta

Q19 Differentiate between perisperm and endosperm giving one example of each.

Q20 Differentiate between geitonogamy and xenogamy in plants. Which one between the two will lead to inbreeding depression and why ?

Q21 Enumerate six adaptive floral characteristics of wind pollinated flowers . Q22 How do flowers reward their insect pollinators ? Explain.

Q23 Mention any four strategies adopted by flowering plants too prevent self pollination. Why is geitonogamy also referred to as genetical autogamy.

Q24 Why should a bisexual flower be emasculated and bagged prior to artificial pollination?

Q25 Draw a longitudinal section of a post pollinated pistil showing entry of pollen tube into a mature embryo sac. Label filiform apparatus , chalazal end, hilum, antipodals, male gametes and secondary nucleus.

Q26 Name all the haploid cells present in an unfertilized mature embryo sac of a flowering plants. Write the total number of cells in it.

Q27 Write the cellular contents carried by the pollen tube. How does the pollen tube gain its entry into the embryo sac?

Q28 Name the product of fertilization that forms the kernel of coconut. How does the kernel differ from coconut water?

Q29 Mention the function of each of the following : a) tassels of corn cob b) tapetum in microsporangium

Q30 Where does triple fusion take place in a flowering plant? Why is it so called? Mention its significance.

Q31 In angiosperm , zygote is diploid while primary endosperm cell is triploid. Explain.
Q32 a) Describe the endosperm development in coconut.
b) Why is tender coconut considered a healthy source of nutrition?
c) How are pea seeds different from castor seeds with respect to endosperm?
Q33 a) Identify the figure b) Name the initial cell from which this structure has developed.
c) Draw the next mature stage and label the parts.
Q34 Why is an apple called a false fruit and banana a parthenocarpic fruit ? Explain.
Q35 Explain any two ways by which apomictic seeds get developed.
Q36 If you squeeze a seed of orange you might observe many embryos of different sizes ?
How is it possible? Explain.
Q37 Draw a transverse sectional view of an apple and label the following parts along with their technical names: a) edible part b) enclosed the embryo c) forms the fruit wall.
Q38 Draw a diagram of an anther lobe at microspore mother cell stage . Mention the role of different wall layers of anther.
Q39 How does the pollen mother cell develop into a mature pollen grain ? Illustrate the stages with labeled diagram.
Q40 list the components of the embryo sac and mention their fate on fertilization.
Q41 With the help of labeled diagram depict the organization of a typical embryo sac just after double fertilization. How are seeds advantageous to angiosperm ?
Q42 Explain with the help of diagram the development of a mature embryo sac from a megaspore mother cell in angiosperm.
Q43 Describe the stages of embryo development in dicot plant.
Q44 Describe in sequence the events that lead to the development of a 3 celled pollen grain from microspore mother cell in angiosperm.
Q45 Give reason :

a) Anther of angiosperm flowers are described as dithecous
b) Hybrid seeds have to be produced year after year
c) Pollen grains are well preserved as fossils
d) Pollen tablets are in use by people these days

Q47 i) Why is the process of fertilization in angiosperms termed as double fertilization ? Explain.

ii) Draw a diagram of an angiospermic embryo sac where fertilization is just completed . Label the following parts :

a) Micropylar end of the embryo sac C)The part that develop into an embryo
b) The part develop into an endosperm D)The degenerating cells at the chalazal end

iii) Draw a labeled diagram of globular embryonic stage of an angiosperm.

Q48 Pistil of a flower does not accept pollen from any plant other than from its own kind. How does happen? Explain.
Q49 Explain the process of artificial hybridization to get improved variety in
(i) plants bearing bisexual flowers (ii) female parent producing unisexual flowers
Q 50 Write the importance of bagging of unisexual flowers in crop improvement program me.
Q 51 Why is it necessary to emasculate a bisexual flower in a plant breeding program me ?
Mention the condition under which emasculation is not necessary.
Q52 Give reason why :

a) Most zygotes in angiosperms divide only after certain amount of endosperm is formed.
b) Groundnut seeds are exalbuminous and cator seeds are albuminous
c) Micropyle remains as a small pore in the seed coat of a seed
d) Integuments of an ovule harden and the water content is highly reduced as the seed matures.
e) Apple and cashew are not called true fruits

Q53 How does the megaspore mother cell develop into 7 celled , 8 nucleate embryo sac in an angiosperm ? Draw a labeled diagram of a mature embryo sac.
Q54 Double fertilization is reported in plants of both castor and groundnut. However the mature seeds of groundnut are non-albuminous and castor are albuminious. Explain the post fertilization events that are responsible for it.
Q55 A flower of tomato plant following the process of sexual reproduction produces 240 viable seeds. Answer the following questions giving reasons :

a) What is the minimum number of pollen grains that must have been involved in pollination of its pistil?
b) What would have been the minimum number of ovules present in the ovary ?
c) How many megaspores mother cells were involved ?
d) What is the minimum number of microspore mother cells involved in the above case.
e) How many male gametes were involved in this case ?

Q56 A non biology person is quite shocked to know that apple is a false fruit , mango is a true fruit and banana is a seedless fruit. As a biology student how would you satisfy this person?

Q57 a) Describe any two devices in a flowering plant which prevent both autogamy and geitonogamy.

b) Explain the events up to double fertilization after the pollen tube enters one of the synergids in an ovule of an angiosperm.

Q58 Differentiate between Parthenocarpy and Parthenoenesis . Give one example each.

CHAPTER-HUMAN REPRODUCTION

Q1 The human testes are located outside the abdominal cavity. Give reason. Q2 Write the location and function of sertoli cells in humans.

Q3 Mention the location and function of Leydig cells in humans.

Q4 Mention the difference between spermiogenesis and spermiation.

Q5 List the changes that the primary oocyte undergoes in the tertiary follicular stage in the human ovary.

Q6 Identify the figure given below and the labeled part 'A'

Q7 Name the embryonic stage that gets implanted in the uterine wall of a human female. Q8 What stimulate pituitary to release the hormone responsible for parturition ? Name the hormone.

Q9 Explain the function of umbellical code.

Q10 How is the entry of only one sperm and not many ensured into an ovum during fertilization in humans?

Q11 Draw a sectional view of seminiferous tubule of human. Label the following cells in the seminiferous tubule :

a) Cells that divide by mitosis to increase their number

b) Cells that undergo meiosis-1 C) Cells that undergo meiosis-2

D) Cells that help in the process of spermiogenesis.

Q12 Study the given figure :

i) Pick out and name the cells that undergo spermiogenesis

ii) Name 'a' and 'b' cells. What is the difference between them with reference to the number of chromosomes

iii) Pick out and name the motile cells.

iv) What is 'f' cell ? Mention its function.

v) Name the structure of which the given diagram is labeled.

Q13 Spermatogenesis in human male is a hormone regulated process.Justify.

Q14 Draw a diagram of human microscopic sperm. Label the following parts and write their functions:

a) Structure that help the sperm to enter the ovum

b) Structure caring genetic material C)Structure that provide motility.

Q15 Mention the fate of corpus luteum and its effect on the uterus in the absence of fertilization of ovum in human female.

Q16 Differentiate between menarche and menopause stage.

Q17 Draw a diagram of the structure of a human ovum surrounded by corona radiate.

Label the following parts: a) ovum b) plasma membrane c) zona pellucid

Q18 Draw a sectional view of human ovary and label : a) Primary follicle b) Graffian follicle

c) Corpus luteum. Mention the role of pituitary hormone on these structures.

Q19 Draw the following diagrams related to human reproduction and label them:

a) zygote after the first cleavage division b) Morula stag c) blastocyst stage (sectional view)

Q20 Study the figure and answer the following questions :

a) Name the stage of human embryo the figure represent

b) Identify 'a' in the figure and mention its function

c) Mention the fate of inner cell mass after implantation

d) Where are stem cells located in this embryo?

Q21 A sperm has just fertilized a human egg in the fallopian tube. Trace the events that the fertilized egg undergo up to the implantation of the blastocyst in the uterus.

Q22 Mention the target cells of lutenising hormone in human males and female. Explain the effect and the changes which the hormone induce in each case.

Q23 Name the hormones produced only during pregnancy in human female. Mention their source organ.

Q24 Name the source of gonadotropin in human female . Explain the change brought about in the ovary by these hormones during menstrual cycle.

Q25 Where do the signal for parturition originate from in humans? Why is it important to feed the new born babies on colostrums?

Q26 Draw a diagrammatic sectional view of the female reproductive system of humans and label the parts :

i) Where the secondary oocyte develop

ii) Which help in collection of ovum after ovulation

iii) Where fertilization occur

iv) Where implantation of embryo occurs.

Q27 Explain the role of pituitary and ovarian hormone in menstrual cycle in human female.

Q28 Draw a diagrammatic sectional view of human seminiferous tubule, label sertoli cell, primary spermatocyte , spermatogonium, and spermatozoa.

Q29 Explain the hormonal regulation of the process of spermatogenesis in humans.

Q30 Describe the events of spermatogenesis with the help of schematic representation. Write two differences between spermatogenesis and oogenesis.

Q31 Study the illustration given and answer the questions that follow :

i) Identify 'a'

ii) Name and state the function of 'c'

iii) Identify 'd'

iv) Explain the role of hormone in the formation and release of 'a'

v) Draw the diagram of 'b' separately and label the parts :

- That helps its entry into 'a'
- That carry genetic material
- That help in its movement

Q32 Explain the different stages of oogenesis in human starting from foetal life till its completion. When and where in the body is oogenesis completed? How do gonadotropins influence this development process.

Q33 Describe the post zygotic events leading to implantation and placenta formation in humans . Mention any two functions of placenta.

Q34 Study the flow chart . Name the hormones involved at each stage . Explain their functions

Q35 Study the graph given below and answer the questions that follow:

a) Name the hormone 'X' and 'Y'.

b) Identify the ovarian phase during menstrual cycle:

i) 5^{th} day to 12^{th} day of cycle II) 14^{th} day of cycle III) 16^{th} to 25^{th} day of the cycle

Q36 Explain the ovarian events (i), (ii) and (iii) under the influence of hormone 'X' and 'Y'.

Q37 The following is the illustration of the sequence of ovarian events (a-i) in a human female:

i) Identify the figure that illustrates ovulation and mention the stage of oogenesis it represents

ii) Name the ovarian hormone and the pituitary hormone that have caused the above mentioned event.

iii) Explain the changes that occur in the uterus simultaneously in anticipation.

iv) Write the differences between 'c' and 'h'.

v) Draw a labeled sketch of the structure of a human ovum prior to fertilization. Q35 Q38 Describe the process of parturition in humans.

Q39 During the reproductive cycle of human female , when , where and how does a placenta develop ? Q Q40 What is the function of placenta during pregnancy and embryo development?

Q41 Name the stage of human embryo at which it gets implanted. Explain the process of implantation.

Q42 Describe the changes that occur in ovaries and uterus in human female during the reproductive cycle.

Q43 Briefly explain the events of fertilization and implantation in an adult human female. Comment on the role of placenta as an endocrine gland.

Q44 Why is breast feeding recommended during the initial period of n infant's growth? Give reasons.

Q45 Explain the importance of syngamy and meiosis in a sexual life cycle of an organisms. Q42 Draw a diagram of a mature human sperm. Label any three parts and write their functions.

Q46 Medically it is advised to all young mothers that breastfeeding is the best for their newborn babies. Do you agree? Give reason in support of your answer.

Q47 Explain menstrual cycle in human females. How can the scientific understanding of the menstrual cycle of human females help as a contraceptive measures?

D.A.V. Public School , Behror

Holiday Homework(Session 2024-25)

Class- XII Subject- Chemistry

Q.1 Define the following terms:

i) Mole fraction ii) Isotonic solutions iii) van't Hoff factor iv) Ideal solutions

Q.2 Define osmotic pressure of a solution. How is the osmotic pressure related to the concentration of a solute in a solution.

Q.3 100 mg of a protein is dissolved in just enough water to make 10.0 mL of solution. If this solution has an osmotic pressure of 13.3 mm Hg at 25°C, what is the molar mass of the protein?

Q.4 15 g of an unknown molecular substance was dissolved in 450 g of water. The resulting solution freezes at -0.34° C. What is the molar mass of the substance? (K_f for water =1.86 K kg mol-1)

Q.5 A 5 % solution (by mass) of cane-sugar (M.W. 342) is isotonic with 0.877% solution of substance X. Find the molecular weight of X.

Q.6 Calculate the freezing point of an aqueous solution containing 10.50 g of $MgBr_2$ in 200 g of water. (Molar mass of $MgBr_2$ = 184 g) (Kf for water = 1.86 K kg mol-1)

Q.7 Give reasons:-

a) Aquatic species are more comfortable in cold water than warm water.

b) Measurement of osmotic pressure method is preferred for the determination of molar masses of macromolecules such as proteins and polymers.

Q.8 Visha took two aqueous solutions, one containing 7.5 g of urea (Molar mass = 60 g/mol) and the other containing 42.75 g of substance Z in 100 g of water, respectively. It was observed that both the solutions froze at the same temperature. Calculate the molar mass of Z.

Q.9 Show graphically how the vapour pressures of a solvent and a solution in it of non- volatile solute change with temperature. Show on this graph the boiling points of the solvent and the solution. Which is higher and why?

Q.10 Show graphically that the freezing point of a liquid will be depressed when a non- volatile solute is dissolved in it.

Q.11 30g of urea (Mol.Mass = 60gmol^{-1}) is dissolved in 846 g of water. Calculate the vapour pressure of water for this solution if vapour pressure of pure water at 298 K is 23.8 mm Hg.

Q.12 Which of the following solutions has higher freezing point ? 0.05 M $Al_2(SO_4)_3$, 0.1 M $K_3[Fe(CN)_6]$ justify.

Q.13 19.5 g of CH_2F COOH is dissolved in 500g of water. The depression in the freezing point of water observed in 1.0°C. Calculate the van't Hoff factor and dissociation constant of fluoroacetic acid.

Q.14 The freezing point of benzene decreases by 2.12 K when 2.5 g of benzoic acid (C_6H_5COOH) is dissolved in 25 g of benzene. If benzoic acid forms a dimer in benzene,calculate the van't Hoff factor and the percentage association of benzoic acid. (Kf = 5.12 Kkgmol^{-1})

Q.15 In the given reaction:- $N_2 + 3H_2 \rightarrow 2NH_3$. Rate of formation of NH_3 is 3.6×10^{-4} molL^{-1}s^{-1}. Calculate

a) Rate of reaction b) Rate of disappearance of H_2.

Q.16 What is the rate of reaction? Write two factors that affect the rate of reaction.

Q.17 In a Reaction; 2A→ P, the concentration of decreases from 0.5molL^{-1} to 0.4molL^{-1} in 10 minutes. Calculate rate during this interval?

Q.18 Define i) order of reaction ii) rate constant iii) molecularity iv) pseudounimolecularity

Q.19 For a reaction:- 2NH3 (g) → N2 (g) + 3H2 (g) Rate =k

i) Write the order and molecularity of reaction. ii) Write the unit of k.

Q.20 Why can't be molecularity of any reaction be equal to zero?

Q.21 A first order reaction takes 40 min for 30% decomposition. Calculate T1/2.

Q.22 A first order reaction takes 30 Minutes for 50 % completion. Calculate the time required for 90% completion of this reaction.

Q.23 The following data were obtained during the first order thermal decomposition of N2O5 at constant volume:-

2N2O5 (g) → 2N2O4 (g) + O2(g)

Calculate rate constant.

S.No.	Time (sec)	Total Pressure (atm)
1.	0	0.5
2.	100	0.512

Q.24 The rate constant for a first order reaction is 60 s^{-1}. How much time will it take to reduce the initial concentration of the reactant to its $1/16^{th}$ value?

Q.25 In the Arrhenius equation, what does the factor $e^{-Ea/RT}$ corresponds to?

Q.26 Give reasons:-

a) Zr (Z= 40) and Hf (Z= 72) have almost same atomic radii.

b) d block elements exhibit more oxidation state than f block.

c) Transition metal form coloured compounds.

Q.27 Calculate the spin only magnetic moment of M^{2+} (aq) Ion (Z= 28).

Q.29 Explain why Cu^{+} ion is not stable in aqueous solution?

Q.30 Account for the following:-

a) Mn shows highest oxidation state of +7 with oxygen but in fluorine it shows the highest oxidation state of +4.

b) Transition metal act as catalyst.

c) Zn, Cd and Hg are non transition elements.

Q.31 Give reasons:-

a) Transition metal and many of their compounds show paramagnetic behaviour.

b) Enthalpy of atomisation of transition metals are high.

c) Transition metal show variable oxidation state.

Q.32 Describe the preparation of $KMnO_4$ from pyrolusite ore. Write balanced chemical equation.

Q.33 Describe the oxidising action of $K_2Cr_2O_7$ and write the ionic equation for its reaction with :- i) iodide ii) iron (Fe^{2+}) iii) H_2S iv) Sn^{+2}

Q.34 What is meant by disproportionation? Give two examples of disproportionation reaction in aqueous solution.

Q.35 Actinoid contraction is greater than lanthanoid contraction. Why?

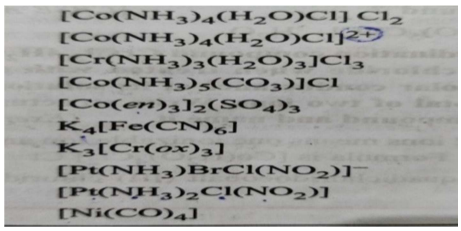
Q.36 On the basis of lanthanoid contraction, explain the following:-

a) Nature of bonding in La_2O_3 and Lu_2O_3.

b) stability of complexes of lanthanoids.

c) trends in acidic character of lanthanoid oxides.

Q.37 Write the IUPAC names of following coordination complexes:-



Q 38 What is meant by crystal field splitting energy? On the basis of crystal field theory, write the electronic configuration d4 in terms of t_2g and eg form in octahedral geometry when

a) $\Delta 0 > P.E$ b) $\Delta 0 < P.E$

Q.39 Explain the following:-

i) $[NiCl_4]^{2-}$ is paramagnetic while $[NiCO_4]$ is diamagnetic, though both are tetrahedral.

ii) $[Co(NH_3)_6]^{3+}$ is an inner orbital complex whereas $[Ni(NH_3)_6]^{2+}$ is an outer orbital complex.

iii) $[Fe(H_2O)_6]^{3+}$ is strongly paramagnetic whereas $[Fe(CN)_6]^{3-}$ is weakly paramagnetic.

Q.40 For the complex $[Fe(CN)_6]3-$, Write the hybridization type, magnetic character and spin nature of the complex.

D.A.V. Public School,Behror
Summer Vacation Homework
Class -XII (2024-25) Physics

Chapter -1 (Electric charger and field)

Q1. In an experiment three microscopic latex spheres are sprayed into a chamber and became Charged with charges +3e, +5e and -3e respectively. All the spheres came in contact Simultaneously for a moment and got separated. Which one ofthe following possible values .For the final charge on spheres?

(a)+5e, -4e, +5e (b) +6e, +6e, -7e (c) -4e, +3.5e, +5.5e (d) +5e, -8e, +7e

Q2. An object has charge of 1 C and gains 5.0 x 1018 electrons. The net charge on the object Becomes

(a)-0.80 C (b) +0.80 C (c) +1.80 C (d) +0.20 C

Q3. Two equal balls having equal positive charge 'q' coulombs are suspended by two insulating Strings of equal length. What would be the effect on the force when a plastic sheet is inserted Between the two?

Q4. Sketch the electric field line for +q and –q.

Q5.Two point charges of +1 μC and +4 μC are kept 30 cm apart. How far from the +1μC charge On the line joining the two charges will the net electric field be zero?

Q6. (a) Define electric field intensity. Write its SI unit.

(b) Two point charges 4 □ c & 1 □ c are separated by a distance of 2m in air. Find the point On the line joining the charges at which the net electric field of the system is zero.

Q7. Obtain the expression for electric field intensity due to a

(a) Point charge and
(b) Due to system of charge Plot the graph for the variation for E and r.

Q8. A hollow cube of side 5cm encloses a charge of 6C at its centre. What is the net flux through One of the square face of cube? How would flux through square face change if 6C charge is
Placed as 4C and 2C inside the cube at two different points?

Chapter – 2(Dual Nature of Radiation and Matter)

Directions: These questions consist of two statements, each printed as Assertion and Reason. While Answering these questions, you are required to choose any one of the following four responses.

(a)If both Assertion and Reason are correct and the Reason is a correct explanation of the Assertion.

(b)If both Assertion and Reason are correct but Reason is not a correct explanation of the Assertion.

(c) If Assertion is correct but Reason is incorrect.

(d)If both the Assertion and Reason are incorrect.

(e)If the Assertion is false but Reason is correct

Q.1 Assertion: An electron is not deflected on passing through certain region of space. This Observation confirms that there is no magnetic field in that region.

Reason: The deflection of electron depends on angle between velocity of electron and direction Of magnetic field.

Q.2 Assertion: The photon behaves like a particle.

Reason: If E and P are the energy and momentum of the photon, then p = E /c.

Q.3 Assertion: Photoelectric effect demonstrates the wave nature of light.

Reason: The number of photoelectrons is proportional to the frequency of light.

Q.4 Monochromatic light of frequency 6.0 × 1014 Hz is produced by a laser. The power emitted Is 2.0 × 10–3 W Calculate the (i) energy of a photon in the light beam and (ii) number of photons Emitted on an average by the source.

Q.5. Write Einstein's photoelectric equation and point out any two characteristic properties of Photons on which this equation is based.

Q.6. The Kinetic Energy (K.E.), of a beam of electrons, accelerated through a potential V, equals The energy of a photon of wavelength 5460 nm. Find the de Broglie wavelength associated with
This beam of electrons.

Q.7.(a) Define photoelectric work function? What is its unit?

(b)In a plot of photoelectric current versus anode potential, how does
(i)Saturation current varies with anode potential for incident radiations of different frequencies But same intensity?
(ii)The stopping potential varies for incident radiations of different intensities but same frequency.
(iii)Photoelectric current vary for different intensities but same frequency of radiations? Justify Your answer in each case?
Q.8 Draw a graph showing the variation of stopping potential with frequency of the incident Radiations. What does the slope of the line with the frequency axis indicate. Hence define Threshold-frequency?

Chapter -3 (Atom)

Q1 Which of the following spectral series in hydrogen atom gives spectral line of 4860A?
(a)Lyman (b) Balmer (c) Paschen (d) Brackett
Q.2 When hydrogen atom is in first excited level, its radius is
(a)same (b) half (c) twice (d) 4 times
Q.3.Rutherford model of atom was unstable because
(a)nuclei will break down (b)electron move in circular orbit
(c)orbiting electrons radiate energy (d) electrons are repelled by the nucleus
Q4. Assertion: According to Bohr's atomic model the ratio of angular momenta of an electron In first excited state and in ground state is 2:1.
Reason: In a Bohr's atom the angular momentum of the electron is directly proportional to the Principal quantum number.
Q5. Assertion: The positively charged nucleus of an atom has a radius of almost 10−15m.
Reason: In a-particle scattering experiment, the distance of closest approach for particles is 10−15m.
Q6. Assertion: For the scattering of a-particles at a large angles, only the nucleus of the atom is Responsible.
Reason: Nucleus is very heavy in comparison to α particle.
Q7.Assertion: Bohr had postulated that the electrons in stationary orbits around the nucleus do Not radiate
Reason: According to classical physics all moving electrons radiate.
Q8.Assertion: Atoms are not electrically neutral.
Reason: Number of protons and electrons are different

Chapter -4(Nuclei)

Q1. The mass number of a nucleus is
(a)Always less than its atomic number
(b)Always more than its atomic number
(c)Always equal to its atomic number
(d)Sometimes more than and sometimes equal to its atomic number
Q2. Nuclear binding energy is equivalent to
(a)Mass of proton. (b) Mass of neutron. (c)Mass of nucleus. (d)Mass defect of nucleus
Q3. In nuclear reaction, there is conservation of
(a)Mass only (b) Momentum only . (c) Energy only (d) Mass, energy and momentum
Q4. Particles which can be added to the nucleus of an atom without changing its chemical Properties are called
(a)Neutrons (b) Electrons (c) Protons (d) Alpha particles
Q5. The radius of a nucleus is
(a)directly proportional to its mass number
(b)Inversely proportional to its atomic weight
(c) Directly proportional to the cube root of its mass number
(d)None of these
Q6. The mass of an atomic nucleus is less than the sum of the masses of its constituents. This mass Defect is converted into
(a)Heat energy (b) Light energy (c) Electrical energy (d) Energy which binds nucleons Together

Q7. The neutrons and protons are collectively called as
(a)Neutrons (b) Mass (c) Nucleons (d) None
Q8. Write difference in nuclear fission and fusion.

Chapter-5(Electronic devices)

Q1.On the basis of energy bands materials are also defined as metals, semiconductors and Insulators. These semiconductors are classified as intrinsic semiconductors and extrinsic Semiconductors also. Intrinsic semiconductors are those semiconductors which exist in pure form And intrinsic semiconductors have number of free electrons is equal to number of holes. The Semiconductors doped with some impurity in order to increase its conductivity are called as Extrinsic semiconductors. Two types of dopants are used they are trivalent impurity and
Pentavalent impurity also. The extrinsic semiconductors doped with pentavalent impurity like Arsenic, Antimony, Phosphorus etc are called as n – type semiconductors. In n type Semiconductors electrons are the majority charge carriers and holes are the minority charge Carriers. When trivalent impurity is like Indium, Boron, Aluminium etc are added to extrinsic Semiconductors then p type semiconductors will be formed. In p type semiconductors holes are Majority charge carriers and electrons are the minority charge carriers.
(I)What is extrinsic semiconductor?
(II)What is ratio of number of holes and number of electrons in an intrinsic semiconductor?
(III)Why doping is necessary?
(IV) Majority charge carriers in p-type semiconductor are_____.
Q2. Why does the Resistivity of Semiconductors go down with Temperature?
Q3.What is meant by intrinsic semiconductor and extrinsic semiconductor? What are the Differences between intrinsic and extrinsic semiconductor?
Q4. What is meant by doping and doping agent?
Q5.Draw the voltage-current characteristic of a p-n junction diode in forwarding bias and reverse Bias.
Q6.Assertion: The p-n junction diode primarily allows the flow of) current only in one direction (forward bias)
Reason: The forward bias resistance is low as compared to the reverse bias resistance.
Q7. Assertion: For a half wave rectifier the output frequency is half of input.
Reason: Half wave rectifier got its name from such phenomena.
Q8.Assertion: Diode is an Ohmic conductor.
Reason: Diodes obey Ohm's law

D.A.V. Public School, Behror
Holiday Homework(Session 2024-25)
Sub.Hindustani Music(Vocal)
Class-XII

नोट:सभी प्रश्नों को अच्छे से **कॉपी** में लिखें व याद करें।

1.अलंकार, कण,मींड, खटका,मुरकी,गमक के बारे में लिखें व याद करें।

2.ग्राम, मूर्च्छना के बारे में विस्तार से लिखें व याद करें।

3.आलाप व तान को विस्तार से लिखें व याद करें।

D.A.V. Public School , Behror

HOLIDAY HOMEWORK

MATHEMATICS

CLASS XII

1. Find the value of $\cos^{-1}\left(\cos\left(\frac{5\pi}{4}\right)\right)$
2. The value of $\cos^{-1}\left(\tan\frac{3\pi}{4}\right)$
3. Write the value of $\sin\left(\tan^{-1}\frac{3}{4}\right)$
4. write the value of $\tan\left(2\tan^{-1}\frac{1}{5}\right)$
5. If A= $\begin{bmatrix} 0 & sin\,\theta \\ cos\theta & 1 \end{bmatrix}$ and A= A^T then find θ .
6. If A is square matrix of order 3x3 such that$|A|$=2 then $|adj(adj\ A)|$ is
7. If y = $\sqrt{sinx + \sqrt{\sin x + \sqrt{\sin x + \cdots .\infty}}}$ then find $\frac{dy}{dx}$.
8. Differenciate f(x) = log $\sqrt{\tan x}$ wrt. x at x=$\frac{\pi}{4}$
9. If $x^m.y^n$=$(x+y)^{m+n}$), then $\frac{dy}{dx}$
10. Find the principal value of cosec $^{-1}$ (-1).
11. If x $\sqrt{1+y}$ + y$\sqrt{1+x}$ =0 for -1<x<1 then find $\frac{dy}{dx}$
12. Differenciate $\tan^{-1}\left[\frac{1+2x}{1-2x}\right]$ with respect to $\sqrt{1+4x^2}$
13. if $x^y = y^x$, then find $\frac{dy}{dx}$
14. Find Maximum value of sin x + cos x.
15. . If $A = \begin{bmatrix} \cos\alpha & -sin\alpha \\ \sin\alpha & cos\alpha \end{bmatrix}$, then $A + A' = I$, then find the value of α.
16. Find $\frac{dy}{dx}$,if x = acosϴ, y = asin θ
17. If y= A sinx + B cosx, then prove that $\frac{d^2y}{dx^2}$+y=0
18. A ballon which is remain spherical has a variable radius. Find the rate at which its volume is increasing with the radius is 15 cm.?
19. Solve system of linear equations by using matrix method:

3x -2y + 3z = 8 ,2x + y - z = 1 ,4x - 3y + 2z = 4

20. Solve system of linear equations, by using matrix method:

2x + y + z = 1, x- 2y - z = $\frac{3}{2}$, 3y - 5z = 9

21. Find $\frac{dy}{dx}$,if y = x^{sinx} + $(sinx)^{cosx}$.
22. . If $(x-a)^2 + (y-b)^2 = c^2$, for some c > 0 yhen prove that $[1 + (y')^2]^{3/2}/ y''$ is independent of a and b. ?
23. Find the intervals in which the function f given by f(x)= $3x^4-4x^3-12x^2+5$ is increasing and decreasing.
24. The value of $\tan^{-1}\left(\tan\frac{3\pi}{4}\right)$
25. Express the following matrix as the sum of a symmetric and a skew- symmetric matrix;

$$\begin{bmatrix} 1 & 3 & 5 \\ -6 & 8 & 3 \\ -4 & 6 & 5 \end{bmatrix}$$

26. If y= x^x find $\frac{d^2y}{dx^2}$.
27. Solve the equations by using matrix method:

2x + 3y + 3z = 5,x- 2y + z = - 4, 3x - y - 2z = 3

28. If $x^m y^n = (x+y)^{m+n}$,prove that $\frac{dy}{dx} = \frac{y}{x}$ and further prove that y''=0
29. Find the intervals in which the function f given by f(x)= $\frac{3}{2}x^4 - 4x^3 - 45x^2 + 51$ is increasing and decreasing.

30. Evaluate : $\begin{vmatrix} \cos 15^0 & \sin 15^0 \\ \sin 75^0 & \cos 75^0 \end{vmatrix}$

31. Find the adjoint of the matrix A = $\begin{bmatrix} -1 & -2 & -2 \\ 2 & 1 & -2 \\ 2 & -2 & 1 \end{bmatrix}$ and hence show that A.(adj.A)= 1A1 I_3

32. If A=$\begin{bmatrix} 2 & 3 \\ 1 & -4 \end{bmatrix}$ and B=$\begin{bmatrix} 1 & -2 \\ -1 & 3 \end{bmatrix}$,then verify that $(AB)^{-1}=B^{-1}A^{-1}$

33. Solve the following system of equations by using matrix method.
$\frac{2}{x}+\frac{3}{y}+\frac{10}{z}=4, \frac{4}{x}-\frac{6}{y}+\frac{5}{z}=1, \frac{6}{x}+\frac{9}{y}-\frac{20}{z}=2$

34. Find $\frac{dy}{dx}$, if $y=(\cos x)^x + (\tan x)^x$

35. If A= $\begin{bmatrix} 3 & -2 \\ 4 & -2 \end{bmatrix}$ and I = $\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$, then Find K so that $A^2=KA-2I$.

36. Show that points A (a, b+c), B (b, c+a) and C(c, a+b) are collinear

37. If siny = xsin(a+y), then prove that $\frac{dy}{dx}=\frac{sin^2(a+y)}{sina}$

38. Find $\frac{dy}{dx}$,if $y=\sec^{-1}(\frac{1}{2x^2-1})$

39. Show that A= $\begin{bmatrix} 2 & -3 \\ 3 & 4 \end{bmatrix}$ Satisfies the equation $x^2-6x+17=0$.Hence find A^{-1}

40. If $x^y=e^{x-y}$, then show that $\frac{dy}{dx}=\frac{\log x}{(\log(xe))^2}$

41. If $x\sqrt{1+y}+y\sqrt{1+x}=0$,for,-1<x<1,prove that $\frac{dy}{dx}=-\frac{1}{(1+x)^2}$

42. 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 $(AB)^{-1}$

43. Show that:$\sin^{-1}\frac{12}{13}+\cos^{-1}\frac{4}{5}+\tan^{-1}\frac{63}{16}=\pi$.

44. Solve the following system of equations by using matrix method:
x-y+2z=7, 3x+4y-5z= -5,2x-y+3z=12.

45. If $x\begin{bmatrix} 2 \\ 3 \end{bmatrix}+y\begin{bmatrix} -1 \\ 1 \end{bmatrix}=\begin{bmatrix} 10 \\ 5 \end{bmatrix}$, find the values of x and y.

D.A.V. Public School, Behror
Holiday Homework(Session 2024-25)
Class- XII Subject- P.Ed.

Explain the role of Yoga in Sports.

Q- 2 Write any five Specific exercise of your Game.

Project work - Make a project file using punch sheet of the following topic

Practical –1 Anyone game of your choice out of the list above. Labelled diagram of field & equipment . Also mention its Rules, Terminologies & Skills Volleyball, Football, Kabaddi, Badminton, Basketball, Cricket.

D.A.V. Public School, Behror
Holiday Homework(Session 2024-25)
Subject- IP(065) Class-XII

Q.1 Write different types of python data types.
Q.2 Write a python program for series.
Q.3 Write a python program of data frame.
Q.4 Make a Google form for quiz.
Q.5 Write and learn different types of python character set.
Q.6 Write and learn uses of brackets in python.
Q.7 Write the structure of SQL programs.
Q.8 Write the use of python language.
Q.9 What is array?
Q.10 Write five program of series and data frame.