

46. Fill in the blanks:

- a) For a motor : a permanent magnet, then commercial motor :
- b) Focal length of a lens : meter, then for power of a lens :

47. Light travels at 1.90×10^8 m/s in a crystal, what is the crystal's index of refraction?

Section - III (Marks : 20)

4x5=20

Note : i) Answer any four questions by choosing one question from each part.

ii) Each question carries five marks.

iii) Draw diagram wherever necessary.

PART - I

48. a) How long an infant should be breast fed?
 b) Breast milk protect the child against pathogens. Name them.
 c) Breast fed infants are healthier than bottle fed infants. Explain.
49. List out the various parts of the human brain and write a note on their functions.

PART - II

50. i) Classify the following fruits based on their mode of dispersal.
 (Balsam, Lotus, Calotropis, Achyranthus)
 ii) Give detailed account on your classification.
51. In your locality people are affected due to water scarcity. What measures will you take to deal with the problem of water scarcity?

PART - III

52. a) Define Avogadro's law
 b) Write the applications of Avogadro's law.
 c) Define Gay - Lussac's law.
53. Write the common name and IUPAC name of the following:
- i) $\text{CH}_3\text{CH}_2\text{CHO}$ ii) CH_3COOH iii) CH_3COCH_3 iv) HCHO
- v) $\text{CH}_3 - \underset{\text{OH}}{\text{CH}} - \text{CH}_3$

PART - IV

54. a) Newton's first law of motion gives a qualitative definition of force. Justify.
 b) A bomb of mass 3kg, initially at rest, explodes into two parts of 2kg and 1kg. The 2kg mass travels with a velocity of 3m/s. At what velocity will the 1kg mass travel?
55. a) Redraw the given diagram.
 b) This diagram represents the



Examination - 2015

Standard X

SCIENCE

Time : 2.30 hrs.

Maximum Marks : 75

Instructions: i) Check the question paper for fairness of printing. If there is any lack of fairness, inform the Hall Supervisor immediately.

ii) Use Black or Blue ink to write and pencil to draw diagrams.

Note: This question paper contains three sections

Section (Marks: 15)

15x1=15

Note: i) Answer all the 15 questions.

ii) Choose the correct answer from the four alternatives given in the brackets.


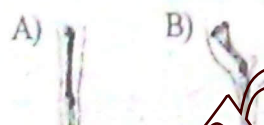
- In persons suffering from insulin-dependent diabetes, the cells of pancreas are degenerated.
 (Alpha, Beta, Gamma, Delta)
- Pick out the exact term of high sensitivity to light.
 (Photosynthesis, Photophobia, Photon, Photolysis)
- An endocrine gland found in the neck is
 (adrenal gland, pituitary gland, thyroid gland, pancreas)
- Special type of inflorescence of fig is known as
 (inflorescence, hypanthodium, thalamus, receptacle)
- Carnivorous animals use these teeth to tear flesh.
 (incisors, canines, premolars, molars)
- The complete oxidation of a glucose molecule in aerobic respiration produces molecules.
 (28ATP, 38ATP, 42ATP, 50ATP)
- Example for product of green chemistry is
 (plastic, paper, bio-plastics, halogen flame retardants)
- is the chief component of natural gas.
 (Ethane, Butane, Propane, Methane)
- The particle size in a Suspension is
 ($1\text{\AA} - 10\text{\AA}$, $10\text{\AA} - 2000\text{\AA}$, more than 2000\AA , less than 1\AA)
- have equal number of neutrons.
 (Isobars, Isotones, Isotopes, Mass numbers)
- The pH of stomach fluid is
 (5.5, 4.1, 2, 12)
- Third period contains 8 elements. Out of these elements, how many elements are non-metals?
 (eight, seven, five, two)
- The physical quantity which is equal to the rate of change of momentum is
 (displacement, acceleration, force, impulse)


14. The unit of Radiation exposure
(watt, roentgen, coulomb, ohm)
15. An electric current through a metallic conductor produces around it
(magnetic field, mechanical force, induced current, newton)

Section - II (Marks : 40)

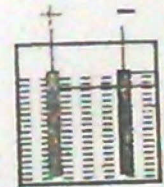
20x2=40

Note: Answer any twenty questions.

16. What are monoclonal antibodies? Mention its use.
17. Match the following:
- | | |
|-------------------|---------------------|
| a) Mendel | - Vaccine |
| b) Charles Darwin | - Organic evolution |
| c) Lamarck | - Evolution |
| d) Edward Jenner | - Mendelism |
18. Define Gene therapy.
19. Name the tests done for the diagnosis and confirmation of AIDS.
20. The diagram is of the human brain. Shade the areas marked A and B in the parts of the brain, corresponding with the function.
- A. Seat of smell
- B. Seat of vision
- 
21. Define fertilization.
22. Write any four differences between arteries and veins in mammals.
23. Observe the figure (A) and (B)
- i) Identify the forelimbs depicted in figure A and B.
- ii) State any one function of B.
- 

24. To spot the error:
Read the following statement and correct them.
Polar bears have thin skin coats to bear the biting cold.
25. What are ammoniatelic and ureotelic animals? Give examples.
26. Observe the diagram.
- i) Name the movement seen in A and B.
- ii) Differentiate the movement.
- 

27. Match the following:
- | | |
|----------------|-----------------------|
| a) Protozoans | - Nephridia |
| b) Sponges | - Kidney |
| c) Round worms | - Contractile vacuole |
| d) Vertebrates | - Cell membrane |

28. Classify the following into producers, consumers, decomposers.
i) butterfly ii) grasshopper iii) calottes iv) snakes v) shoe flower vi) nitrobacteria
29. Find the odd one out:
- a) Bio-alcohol, Green diesel, Bio-ethers, Petroleum.
- b) Cholera, Typhoid, Scabies, Dysentery.
30. i) Name any two diseases caused by polluted water.
ii) Why do we drink boiled water?
31. What is energy management?
32. i) Which gas is dissolved in soft drinks?
ii) What will you do to increase the solubility of the gas?
33. Match the following:
- | | |
|-----------------------|----------------------|
| a) Cheese | - Gas in solid |
| b) Cork | - Liquid in solid |
| c) Solution | - Tyndall effect |
| d) Colloidal solution | - Solute and solvent |
34. Gram molecular mass of Oxygen is 32g. Density of oxygen is 1.429g/cc. Find the Gram molecular volume of Oxygen.
35. Differentiate between exothermic and endothermic reactions.
36. What are uses of salts?
- i) CaOCl_2 ii) Na_2CO_3
37. Can the rusting of iron nails occur in distilled water? Justify your answer.
38. Name the ores of aluminium.
39. $\text{C}_2\text{H}_6\text{O}$ is the molecular formula for compounds A and B. They have different structural formula.
- i) Write down their common and IUPAC names.
- ii) Mention the functional groups of A and B.
40. Write two principles that are used in rocket propulsion.
41. Define Newton's second law of motion.
42. How many electrons flow through an electric bulb every second, if the current that passes through the bulb is 1.6A?
43. Draw a diagram of Lead-acid accumulator. Label the parts Pb, PbO_2 , H_2SO_4 , Glass container.
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44. A wire is bent into a circle. The effective resistance across the diameter is 8Ω . Find the resistance of the wire.
45. Does magnetic monopole exist? Give reasons.