

**SCIENCE QUESTION PAPER
CLASS-X
(MARCH, 2011)
PART-A**

Time : 75 minutes

Maximum Marks : 50

Instructions :

- (1) There are **50** objective type questions in this part and **all** are **compulsory**.
(2) The questions are serially numbered from **1** to **50** and each carries **1** mark. .
(3) You are supplied with separate OMR sheet with the alternatives (A) ☐, (B) ☐, (C) ☐, (D) ☐ against each question number. For each question, select the correct alternative and darken the circle ☐ as ☒ completely with the pen against the alphabet corresponding to that alternative in the given OMR sheet.
- From the following **1** to **50** questions, select the correct alternative from the given four answers and darken the circle with pen against the alphabet, against the number in OMR sheet.
 - Each question carries **1** mark.
- 1.** From which kind of Steel is the permanent magnet prepared ?
(A) Silica steel (B) Stainless steel
(C) Cobalt steel (D) Manganese steel
- 2.** What is the pH of pure water at 25°C temperature ?
(A) 14 (B) 7
(C) 10 (D) 1
- 3.** What is the chemical formula of Borax ?
(A) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$ (B) $\text{Na}_2\text{CO}_3 \cdot \text{H}_2\text{O}$
(C) $\text{Na}_2\text{CO}_3 \cdot 10\text{H}_2\text{O}$ (D) $\text{Na}_2\text{B}_4\text{O}_7 \cdot 7\text{H}_2\text{O}$
- 4.** What is used in Endoscope ?
(A) Photochromic Glass (B) Optical Glass
(C) Pyrex Glass (D) Optical Fibres
- 5.** What percentage of Gypsum is added in the preparation of Cement ?
(A) 2% to 5% (B) 0.2% to 1.5%
(C) 6% to 8% (D) 8% to 10%

6. What is the excretion structure in Amoeba ?
(A) Contractile Vacuole (B) Flame Cells
(C) Nephridia (D) Osculum
7. In angiospermic plants, what structures are present for the transport of Water ?
(A) Tracheid (B) Trachea
(C) Sieve tube (D) Companion cell
8. Which of the following tropism is responsible for the germination of pollen grains and the development of pollen tubes ?
(A) Chemotropism (B) Thigmotropism
(C) Phototropism (D) Hydrotropism
9. Which of the following is a growth hormone in plants ?
(A) Auxin (B) Ethylene
(C) Abscissic acid (D) Auxitocin
10. Which pigment is responsible for the Photoperiodic stimulus in plants ?
(A) Phytochrome (B) Chloroplast
(C) Carotene (D) Cytochrome
11. What is the IUPAC name of Acetic acid ?
(A) Methanoic acid (B) Ethanoic acid
(C) Propanoic acid (D) Butanoic acid
12. What is the reaction between Carboxylic acid and Ethanol in the presence of H_2SO_4 known as ?
(A) Saponification (B) Esterification
(C) Polymerisation (D) Dissociation of water
13. Which functional group is connected to Hydrocarbon in Soap ?
(A) $-\text{COONa}$ (B) $-\text{CONH}_2$
(C) $-\text{COOH}$ (D) $-\text{SO}_3\text{Na}$
14. Which of the following mode of nutrition does a Rat have ?
(A) Herbivorous (B) Carnivorous
(C) Omnivorous (D) Grazing
15. Where are the antigens for the blood group located ?
(A) Lymphocyte (B) W.B.C.
(C) Blood Platelets (D) R.B.C.

16. Which disease is caused by the bacteria named *Treponema pallidum* ?
(A) AIDS (B) Gonorrhoea
(C) Syphilis (D) Hepatitis
17. Which of the following protects the embryo during its development ?
(A) Amnion (B) Liver
(C) Umbilical cord (D) Uterus
18. The plant in which grafting is done, is called
(A) Scion (B) Root
(C) Stock (D) Root-tip
19. What is the period from the development of foetus till the birth, called ?
(A) Gestation (B) Embryonic development
(C) Lactation (D) Fertilisation
20. Which of the following alloys is used in making Currency coins ?
(A) Brass (B) Steel
(C) Solder (D) Magnalium
21. Which chemical is obtained, when Carbon-dioxide is dissolved in Water ?
(A) Carbonic acid (B) Carboxylic acid
(C) Carbon-di-sulphide (D) Acetic acid
22. Which gas has a pungent smell and irritates the eyes and nose ?
(A) Carbon-monoxide (B) Ammonia
(C) Nitrogen (D) Carbon-dioxide
23. What is the shape of monoclinic Sulphur ?
(A) Triangular pyramid (B) Needle shaped
(C) Quadrangular (D) Octahedral
24. Which enzyme converts milk into curd ?
(A) Lactase (B) Invertase
(C) Zymase (D) Cellulose

- 25.** The magnitude of a Quantum dot is
- (A) 10 Å (B) 100 Å
(C) 5 nm (D) 50 nm
- 26.** What is the angle of incidence called when the angle of refraction is 90° ?
- (A) Angle of Refraction (B) Angle of Deviation
(C) Critical Angle (D) Angle of Incidence
- 27.** In the dispersion of light through a prism, which coloured ray deviates the most ?
- (A) Red (B) Yellow
(C) Blue (D) Violet
- 28.** Which of the following lens is used by the person having Far-sighted defect ?
- (A) Convex lens (B) Concave lens
(C) Cylindrical lens (D) Bi-focal lens
- 29.** In an Astronomical Telescope, what is the focal length of objective as compared to the focal length of its eye-piece ?
- (A) Large (longer) (B) Shorter
(C) Equal (D) Infinity
- 30.** Which of the following scientists discovered the Phonograph ?
- (A) Michael Faraday (B) Thomas Alva Edison
(C) Einstein (D) Humphry Davy
- 31.** State the value of one unit of electricity used for household purpose (domestic use).
- (A) 1 Joule (B) 1 Watt second
(C) 3.6×10^6 Joule (D) 3.6×10^6 kWh
- 32.** Which of the following shows Ohm's law ?
- (A) $R = \frac{I}{V}$ (B) $I = \frac{R}{V}$
(C) $V = IR$ (D) $R = \frac{P}{I^2}$

- 33.** Which instrument is used to determine the presence of electric current ?
(A) Electric Generator (B) Galvanometer
(C) Fuse (D) Voltmeter
- 34.** Which reaction takes place at positive electrode (anode) during Electrolysis process ?
(A) Oxidation (B) Reduction
(C) Oxidation-Reduction (D) Equilibrium
- 35.** Which of the following metals exists in liquid state ?
(A) Aluminium (B) Gallium
(C) Potassium (D) Radium
- 36.** What is the colour of the wire used for Earthing ?
(A) Red (B) Black
(C) Green (D) Yellow
- 37.** What kind of current is obtained from a Battery ?
(A) DC current (B) AC current
(C) AC and DC both (D) Depends on the type of battery
- 38.** How many small mirrors are used in the Solar furnace installed at Mount Louis in France ?
(A) 4500 (B) 3500
(C) 3000 (D) 2500
- 39.** Which of the following is the best quality Coal ?
(A) Lignite (B) Bitumen
(C) Anthracite (D) Peat
- 40.** How many satellites does the planet Mercury has ?
(A) 30 (B) 21
(C) 8 (D) 0
- 41.** Which planet is totally made up of Hydrogen ?
(A) Mars (B) Venus
(C) Saturn (D) Pluto

42. Which of the following satellite gives information regarding the life in Oceans and the environment around it ?
(A) INSAT - 4A (B) METSAT
(C) RESOURCESAT (D) EDUSAT
43. Which of the following Rockets is not a Space-Shuttle ?
(A) Columbia (B) Challenger
(C) Polar Satellite Launch Vehicle (D) Discovery
44. What is the unit of the rate of reaction ?
(A) Molar (B) Second
(C) Molar / Second (D) Second / Molar
45. What is the helical length of each DNA molecule ?
(A) 10 Å (B) 20 Å
(C) 3.4 Å (D) 34 Å
46. What is the continuity of features from one generation to another called ?
(A) Variation (B) Evolution
(C) Heredity (D) Migration
47. In which of the following does the embryo become male animal at higher temperature ?
(A) Tortoise (B) Lizard
(C) Grasshopper (D) Rabbit
48. Which gas in the atmosphere is responsible for Acid-rain ?
(A) Nitrous oxide (B) Carbon-monoxide
(C) Sulphur-dioxide (D) Methane
49. By which method is the particulate pollutants controlled ?
(A) Combustion (B) Absorption
(C) Electrostatic precipitator (D) Sedimentation
50. How many pairs of Spinal nerves arise from the human Spinal Cord ?
(A) 11 (B) 21
(C) 23 (D) 31

PART-A

Time : 2.00 Hours]

[Maximum Marks : 50

Instructions :-

- (i) There are total four sections in this part.
- (ii) **All** questions are **compulsory**.
- (iii) Draw neat labelled diagram as per instructions.
- (iv) There are internal options in some questions. Pay attention to them.
- (v) Figures to the right indicate marks.

SECTION - A

Questions from 1 to 5 are Short answer type questions. Write answer to each using maximum 30 words. Each question carries 2 marks.

- 1. State the benefits of Nano technology to mankind. **2**
- 2. Write short notes on Bio-gas. **2**
- 3. What do you understand by Fossil Fuel ? Name some fossil fuels. **2**

OR

- 3. Name the Atomic energy research centre in India. State the places in India, where the Nuclear Power plants are situated.
- 4. State the characteristics of Terrestrial Planets. **2**
- 5. 49 gm of H_2SO_4 is dissolved in 5 litres solvent. Find the Molarity of the solution. (Molecular weight of H_2SO_4 is 98 gm/mole) **2**

OR

- 5. What do you understand by Forward and Reverse reaction ? Explain.

SECTION - B

Questions from 6 to 10 are Short answer type questions. Use maximum 30 words to answer them. Each question carries 2 marks.

- 6. State the criteria for Chemical Equilibrium. **2**

7. State the uses of Bleaching Powder. 2
 8. Write the preparation of Methanal. (Formaldehyde - HCHO) 2
- OR**
8. Explain the industrial preparation of Propanone.
 9. Explain the Reflex Arc. 2
 10. Name the environmental problems. 2

SECTION - C

Questions from 11 to 15 are Short answer type questions. Use maximum 50 words to answer them. Each question carries 3 marks.

11. Describe the construction of Voltaic cell with a neat diagram. 3
- OR**
11. Explain Electrolysis. Write Faraday's laws of Electrolysis.
 12. Discuss in detail the precautions to be taken while using electricity. 3
What is the work of Fuse ?
 13. Describe in short, Frasch method to obtain Sulphur. 3
- OR**
13. Write the uses of Non-metals.
 14. Explain the phenomenon of Blood-clotting. 3
 15. Explain how vestigial organs support the theory of Evolution. 3

SECTION - D

Questions from 16 to 18 are to be answered in detail using nearly 100 words. Each question carries 5 marks.

16. Describe the Refraction of light through a rectangular glass slab. 5
Explain the Lateral Shift.
 17. Describe Hall-Heroult method to get pure Aluminium from Alumina. (Diagram necessary) 5
- OR**
17. State the different stages of Metallurgy and give information about each in short.
 18. Describe the "Light Phase" of Photosynthesis process. 5
- OR**
18. Describe the human respiratory system in detail.