

47. Identify the gas which is not a green house gas ?
(A) CO₂ (carbondioxide)
(B) CH₄ (methane)
(C) O₂ (oxygen)
(D) O₃ (ozone)
48. Which of the following division has only one living representative ?
(A) Cycadophyta
(B) Ginkgophyta
(C) Gnetophyta
(D) Conferophyta
49. What do we call the branch of science that deals with the sytematic classification of disease ?
(A) Pathology (B) etiology
(C) nosology (D) medicine
50. Which is reponsible for denitrification in nitrogen cycle ?
(A) fungi (B) nitrosomonas
(C) nitrobacter (D) pseudomonas

24thMIX
(SCIENCE)

Time Allowed 1 hour

Maximum Marks : 100

Read the following instructions carefully before you begin to answer the questions.

1. This booklet contains 50 questions in all.
2. All questions are compulsory and each question carries 2 marks.
3. Before you start to answer the questions you must check up this booklet and ensure that it contains all the pages 5 (Five) and see that no page is missing or repeated. If you find any defect in this Booklet, you must replace it immediately.
4. There will **NOT** be any negative marking for wrong answers.
5. You are required to fill the information on the answer sheet which you will get in the examination hall by **H.B. pencil or BALL point pen**.
6. **Answer Sheet** and **Question Paper** will be supplied in examination hall. After the test is over, you should hand over the answer sheet to the invigilator before leaving the room.
7. You should write your **Name, Roll No.**, carefully on the space provided in the answer sheet. Otherwise you will be awarded **ZERO** mark.
8. If you wish to change your answer, **ERASE** completely the darkened circle by using an **ERASER** and then blacken the new circle. If not erased completely, smudges will be left on the erased circle and the question will be read as having two answer and will be ignored for giving any credit.
9. Answer the questions as quickly and as carefully as you can. Some questions may be difficult and others easy. Do not spend too much time on any question.
10. You are not allowed to leave the examination hall until you are advised to do so by the invigilator.

SECTION - A (CHEMISTRY)

1. The rate of evaporation is inversely proportional to ____
(A) surface area (B) humidity
(C) wind speed (D) temperature
2. What is the approximate ratio of the diameter of an atom to that of its nucleus ?
(A) 1:1 (B) $6.022 \times 10^{23} : 1$
(C) $1:10^5$ (D) $10^5:1$
3. Which of the following substances has minimum space between the particles ?
(A) Water (B) Watervapour
(C) Iron (D) Steam
4. How can we get pure potash alum from an impure sample ?
(A) Centrifugation
(B) Sublimation
(C) Chromatography
(D) Crystallisation
5. The mass number of an atom of an element is the number of _____ present in the atom.
(A) protons (B) neutrons
(C) nucleons (D) nucleus
6. What is the size (in range) of particles present in brass ?
(A) less than 1nm in diameter
(B) between 1nm-100nm in diameter
(C) larger than 100nm in diameter
(D) None of the above.
7. The atomic radius of a sulphur atom is
(A) 0.104nm (B) 0.144nm
(C) 0.074nm (D) 0.197nm
8. What is the other name of Canal ray ?
(A) Cathode ray (B) Anode ray
(C) Alpha ray (D) Gamma ray
9. The necessary conditions for liquifying a gas are ____
(i) high temperature
(ii) low temperature
(iii) high pressure
(iv) low pressure
(A) (i) and (ii) (B) (ii) and (iii)
(C) (iii) and (iv) (D) (iv) and (i)
10. What is the symbol of Chlorine ?
(A) C (B) Cl
(C) Cl_2 (D) Cu
11. Find the number of electrons which would have nearly the same mass as the mass of a proton
(A) 1 (B) 1837
(C) $\frac{1}{1837}$ (D) 6.022×10^{23}
12. Which of the following will show Tyndall effect ?
(A) Sugar solution
(B) Copper sulphate solution
(C) Starch solution
(D) Potassium permanganate solution
13. What is the valency of bicarbonate ion?
(A) 1 (B) 2
(C) 3 (D) 4

SECTION - C (BIOLOGY)

35. How many chromosome(s) does a bacterium cell have ?
(A) 1 (B) 16
(C) 46 (D) 48
36. What type of epithelial tissue is present in the inner lining of the stomach and intestine ?
(A) Squamous epithelium
(B) Columnar epithelium
(C) Ciliated epithelium
(D) Cuboidal epithelium
37. What is responsible for diffusion ?
(A) Archemede's Principle
(B) Brownian motion
(C) Newton's law of gravitation
(D) Lennaian hierarchy
38. What type of irrigation is best suited in an area where water is scarce ?
(A) Surface irrigation
(B) Sprinkler irrigation
(C) Trickle irrigation
(D) All the above
39. Which of these cell organelles is a self replicating organelles ?
(A) Endoplasmic reticulum
(B) Golgi apparates
(C) Mitochondria
(D) Lysosomes
40. What is the scientific name of domesticated dog ?
(A) Canis lupus
(B) Canis familiaris
(C) Homo sapiens
(D) Chironess fleckeri
41. The rate of transport for a particular molecule by simple diffusion across a cell membrane is proportional to :
(A) Concentration gradient across the membrane
(B) lipid solubility of the molecule
(C) hydrophobicity of the molecule.
(D) all the above.
42. What is the latin name of scurvy ?
(A) Scorbetus (B) Scorbotus
(C) Scorbutus (D) Scorvytus
43. Identify the odd tissue from the following based on the cell type they constitute.
(A) Parenchyma
(B) Chlorenchyma
(C) Collenchyma
(D) Sclerenchyma
44. At which stage of mitosis where nucleolus and nuclear membrane begins to dissolve ?
(A) Prophase (B) Metaphase
(C) Anaphase (D) Telophase
45. Name the phenomenon by which organism of certain phylum roll up into a ball and survive long periods of desiccation.
(A) anabiosis (B) trichinosis
(C) Elephantiasis (D) moulting
46. Which of the following fish variety is a surface feeder ?
(A) Silver carp (B) Rohu
(C) Common carp (D) Mrigal

26. Suppose a constant force acts on a body initially kept at rest. The distance covered by the body in time 't' from start is proportional to :
- (A) t (B) t^2
(C) t^{-1} (D) t^3
27. How many kilowatts does a megawatt constitute ?
- (A) 1 (B) 1000
(C) 1000000 (D) 746
28. What is the SI unit of relative density or specific gravity of a substance ?
- (A) kg/m^3 (B) m/sec^2
(C) N.m (D) No unit
29. What is the ratio of the force of attraction between two bodies to that the force when their distance be reduced to half the original distance of separation ?
- (A) 1:1 (B) 1:4
(C) 1:2 (D) 4:1
30. Two bodies 'A' and 'B' of masses 5kg and 50kg respectively are dropped from a same height on the ground in vacuum. Which of the following statement is true ?
- (A) A will reach the ground before B.
(B) B will reach the ground before A.
(C) Both A and B will reach the ground simultaneously.
(D) None of the above
31. An unbalanced force of 20N acts on a body and the body accelerates with an acceleration of 4m/sec^2 . What will be its weight on the surface of the moon?
- (A) 49kg (B) 49N
(C) 5kg (D) 8.167N.
32. For a body at free fall,
- (i) the K.E is directly proportional to P.E.
(ii) the K.E is inversely proportional to P.E.
(iii) the sum of K.E and P.E varies at different positions.
(iv) the sum of K.E and P.E remains the same at different positions.
- Which of the following statements are correct ?
- (A) (i) and (iii) (B) (ii) and (iv)
(C) (i) and (iv) (D) (ii) and (iii)
33. The product of frequency and time period of a wave is always ____
- (A) less than unity
(B) unity
(C) greater than unity
(D) different for different types of wave.
34. A sound wave is incident on a wall with an angle of 30° from the wall. What is the angle formed between the incident sound and the reflected sound ?
- (A) 0° (B) 30°
(C) 60° (D) 120°

14. Find the number of atoms present in a mole of sulphuric acid.
- (A) $1 \times 6.022 \times 10^{23}$
(B) $3 \times 6.022 \times 10^{23}$
(C) $5 \times 6.022 \times 10^{23}$
(D) $7 \times 6.022 \times 10^{23}$
15. The molecule of argon is ____
- (A) monoatomic (B) diatomic
(C) triatomic (D) tetratomic
16. Pumice is a ____
- (A) Solid aerosol (B) Solid sol
(C) Solid foam (D) Foam
17. What is the percentage composition of oxygen in ozone molecule ?
- (A) 3% (B) 11.11%
(C) 33.33% (D) 100%
- SECTION - B (PHYSICS)**
18. A boy while driving to his school covers at the average speed of 15km/hr. On his return trip along the same route, he covers at the average speed of 25km/hr due to less traffic. What is his average speed for the whole trip ?
- (A) 20 Km/hr. (B) 18.75 Km/hr.
(C) 16.25 Km/hr. (D) 0 Km/hr.
19. What is the unit (in CGS system) of the physical quantity that measures the inertia of a body ?
- (A) Kg (B) gram
(C) poundal (D) erg
20. The work done by a body of 2kg mass while it is raised through a height of 1m is :
- (A) 19.6 J (B) $\frac{1}{19.6}$ J
(C) -19.6 J (D) Zero
21. Which of the following substances would have the highest density ?
- (A) Ice (B) Iron
(C) Water (D) Mercury
22. What is the relevant equation of motion for a body acted by a balanced force ?
- (A) $S = vt$ (B) $V = u + at$
(C) $S = ut + \frac{1}{2}at^2$ (D) $V^2 = u^2 + 2aS$
23. What made people believe that 'rest is the natural state of every inanimate object', before Galileo Galilei and Isaac Newton ?
- (A) Gravitation (B) Floatation
(C) Friction (D) Conservation of momentum.
24. Which of these is a part of inner ear ?
- (A) Hammer (B) ear-drum
(C) Cochlea (D) anvil
25. What is the nature of the velocity- time graph of a body having non-uniform acceleration ?
- (A) Straight line inclined up or down the velocity axis.
(B) Straight line parallel to time axis.
(C) Zig-Zag line
(D) Curve