Science – Mock Test Paper

Time: 3 hrs **Max. Marks: 80**

General Instructions

1. The question paper comprises of two sections, A and B, you are to attempt both the sections.
2. All questions are compulsory.
3. There is no overall choice. However, internal choice has been provided in all the three questions of five marks category. Only one option in such questions is to be attempted.
4. All questions of section A and all questions of section B are to be attempted separately.
5. Question numbers **1 to 4** in section A are **one mark** question. These are to be answered in one word or one sentence.
6. Questions numbers **5 to 13** are **two marks** questions, to be answered in about 30 words.
7. Question numbers **14 to 22** are **three marks** questions, to be answered in about 50 words.
8. Question numbers **23 to 25** are **five marks** questions, to be answered in about 70 marks.
9. Question numbers **26 to 41** in section B are multiple choice questions are based on practical skills. Each question is a **one mark** question. You are to choose one most appropriate response out of the four provided to you.

Section A

1. Is potential energy a vector or a scalar quantity?

2. At what position, pendulum acquires the maximum kinetic energy?

3. Write any two methods of preventing soil erosion.

4. Why the temperature of the moon falls to -190° C?

5. (i) On the basis of Thomson's model of an atom, explain how the atom is neutral as a whole?
(ii) Where are electrons found in the atom?

6. (i) Which postulate of Dalton's atomic theory is the result of the law of conservation of mass?
(ii) Name the term is used for the symbolic representation of a molecule of an element or a compound? Give an example of it.

7. (a) Which phylum of kingdom animalia has spiny body? Give one example of it.
(b) Write the name of the class to which the following belongs:
(i) Sea horse.
(ii) King cobra.

8. (a) Write two points of difference between amphibians and reptiles.
(b) List two characters which help amphibians to survive on land.

9. (i) Do fluids exert pressure? How is pressure transmitted in a fluid?
(ii) Why a steel ball sinks in water?

10. Relative density of silver is 10.8. The density of water is 10^3 Kgm^{-3}. What is the density of silver in SI unit?

11. (i) Give any two examples of longitudinal waves.
(ii) What is the most essential property of a wave motion and why?

12. (a) What is the major component of atmosphere of earth and Venus?
(b) What is the direction of air in coastal areas during the night?

13. (a) Name any two abiotic factors that make soil.
(b) What would happen if all the oxygen present in the environment is converted to ozone?

14. (a) What are lichens? Give two examples and one use of it?
(b) Name the excretory organs of following:
(i) Cockroach
(ii) Leech

15. (a) What are the two ways to treat an infectious disease?
(b) Name any two sexually transmitted diseases.

16. (a) How air borne transmitted diseases like common cold spreads?
(b) What do we call such microorganisms that cause diseases? Give one example also.

17. (a) Why antibiotics do not work against viruses?
(b)
(i) Name any two diseases which have long term effect on the health of an individual.
(ii) What is immunity?

18. (a) What is the mass of:
(i) 0.2 mole of oxygen atoms?
(ii) 0.5 mole of water molecules?
(b) Name the two types of radicals.

19. (a) State the law of constant proportions? Explain with one example.
(b)Write the symbols of sodium and silver.

20. (a) Calculate the work done in lifting 200 kg of water through a vertical height 6 meter. (Assuming $g = 10m/s^2$)
(b) When an object moves on a circular path, what is the work done?

21. (a) Define frequency and wavelength in reference to sound.

(b) What is echo? Give formula for time of echo.

22. (a) Establish a relation between wavelength, frequency and speed of sound in a medium.
(b) Give two examples of transverse waves.

23. (a) Describe the oxygen cycle in nature.
(b) What is the importance of carbon cycle in nature?
(c) List any two consequences of global warming.

Or

(a) Define biogeochemical cycles.
(b) Describe the various steps of hydrological cycle.
(c) How is acid rain formed?

24. The atomic number of chlorine is 17 and mass number is 35.
(a) What would be electronic configuration of a negatively charged chloride ion, Cl^- ?
(b) What would be the atomic number and mass number of Cl^- ?
(c) Define valency and calculate the valency of Cl^-

Or

The relative atomic mass of Boron is 10.8. Calculate the percentage of its isotopes $^{10}_{5}B$ and $^{11}_{5}B$, occurring in nature.

25. (a) Calculate the power of an engine which can lift 200 Kg of water to store in a tank at a height of 10 m in 4.9 s. Also express in horse power. (given = 9.8 m/s^2).
(b) What type of energy is stored in the spring of a watch?
(c) What is the work done by the tension in the string of a sample pendulum?

Or

(a) What happens to the kinetic energy when:
(i) The mass of the body is doubled at constant velocity?
(ii) The velocity of the body is doubled at constant mass?
(iii) The mass of the body is doubled but the velocity is reduced to half?
(b) Two bodies of equal masses move with the uniform velocities v and 3v respectively. Find the ratio of their kinetic energies.

Section B

26. What type of surface is needed for the reflection of sound waves?
(a) Smooth surface only
(b) Polished and smooth surface
(c) Hard surface only
(d) Polished and rough surface

27. SI unit of pressure is
(a) Newton
(b) Newton m^2
(c) Newton/m^2
(d) Pascal m^2

28. The measuring range of a measuring cylinder is 25 ml. If its least count is ½ ml, then the space between 5 ml and 10 ml mark should be divided into
(a) 25 equal parts
(b) 10 equal parts
(c) 5 equal parts
(d) 2 equal parts

29. The sea water is denser than fresh water due to
(a) Evaporation
(b) Mixing of sand
(c) Mixing of salts
(d) Stagnation

30. Apparent loss in weight is caused due to
(a) Decrease in mass
(b) Decrease in volume
(c) Upward thrust exerted by the liquid
(d) Decrease in density

31. A nail sinks in the sea water but a much heavier ship floats on it because
(a) Density of sea water is very high.
(b) Ship is not too heavy.
(c) The weight of the water displaced by the ship is more than that of the ship.
(d) The uplift acting on ship is very small compared to the weight of the ship.

32. A body is weighed using a spring balance. It will show the weight of the body at your place to be
(a) More than at the equator.
(b) Equal to that at the poles.
(c) Less than that at the equator.
(d) More than that at the poles.

33. Waves propagate well in
(a) Loaded slinky
(b) Unloaded slinky
(c) Equally in (a) and (b)
(d) None of these

34. A sound wave strikes the surface of reflecting body at an angle of 30^0. The angle of incidence for the sound wave is
(a) 30°
(b) 60°
(c) 120°
(d) 90°

35. When a boy shouts in front of a high hall, he hears his own voice after sometime. This phenomena is known as
(a) Irregular reflection of sound.
(b) An echo
(c) Refraction of sound
(d) A pulse formed in the air.

36. Which of the following is the characteristic feature of ferns?
(a) They have male and female cones.
(b) They have rhizoids.
(c) They have needle shaped leaves.
(d) Their plant body is differentiated into root, stem and leaves.

37. Choose the option which includes the feature that helps the fish to change its direction.
(a) Caudal fin and pelvic fin
(b) Dorsal fin and anal fin.
(c) Dorsal fin only
(d) Caudal fin only

38. Pick the odd one out:
(a) Jointed legs
(b) Scales
(c) Compound eyes
(d) Wings

39. Which of the following is not an aerial adaptation of bird?
(a) Presence of strong flight muscles.
(b) Presence of vertebral column.
(c) Streamlined body.
(d) Forelimbs modified into wings.

40. Choose the option that best describes the feature of spirogyra.
(a) Multicellular, autotrophic, root like rhizoids
(b) Cytoplasmic strands, autotrophic, presence of rhizome
(c) Presence of male cones, nonvascular filaments
(d) Filamentous, Presence of cytoplasmic strands, presence of pyrenoids

41. Identify the group of plants in which vascular tissues are present, but no seeds,
(a) Bryophyta
(b) Pteridophyta
(c) Gymnosperm
(d) Angiosperm