PRERNA EDUCATION

Class IX

Sample Paper -Science

Time: 3 hours **M. M. : 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 words.
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. Give one example where kinetic energy is transferred from one object to other.

2. A battery lights a bulb. Suggest the possible energy changes involved in the lighting process.

3. What are the different states in which water is found during the water cycle?

4. List any two human activities that lead to an increase in the carbon dioxide content of air.

5. Flash and thunder are produced simultaneously. But thunder is heard a few seconds after the flash is seen, why? How does the speed of sound in air vary with rise in density of the medium?

6. The volume of 50 g of a substance is 20 cm. If the density of water is 1g/cm, will the substance float or sink?

7. What are polyatomic ions? Give any two examples.

8. Archimedes could find the purity of a king's crown using buoyancy. How?

9. (a) If an element M has mass number 27 and atomic number 13, how many neutrons does its atom contain?

(b) Define Avogadro's constant. Give its value.

10. (a) Name any two green house gases.

(b) What causes global warming?

11. Give two examples each of biodegradable and non-biodegradable pollutants.

12. Write two points of difference between gymnosperms and angiosperms.

13. List any two characteristics of division Pteridophyta that shows they are the most advanced cryptogams.

14. (a) Draw a diagram depicting low pitched sound and high pitched sound.

(b) When a person uses deodorant spray, the other person standing at a distance would hear the sound of spraying first and the fragrance of spray would reach him later. Why so?

15. (a) How do you define mechanical work?

(b) Name and define SI unit of work?

(c) What do you mean by positive and negative work? Give example.

16. Explain the working and application of a SONAR.

17. State any three postulates of Dalton's atomic theory.

18. Calculate the number of molecules of sulphur present in 16 g of solid sulphur.

19. Give two examples of each of the following:

(a) Diseases which spread through air (b) Diseases which spread through water.

(c) Diseases which spread through insect.

20. What precautions can you take in your school to reduce the incidence of infectious diseases? Mention any three points.

21. List any two benefits of classification.

Why bryophytes and pteridophytes grow in moist and shady places?

22. Explain, how HIV-AIDS virus affects and damages our body? What is an antibiotic?

23. (a) State the law of conservation of energy.

(b) Name the type of energy possessed by the following:

(i) stretched slinky (ii) a speeding car

(iii) flowing water (iv) stretched rubber band.

(c) An object of mass 50 kg is raised to a height of 600 cm above the ground. What is its potential energy? (g = 10 m/s)

Or,

(a) Define kinetic energy. Give examples.

(b) Obtain an expression for the kinetic energy of an object of mass 'm' and possessing a velocity 'v'.

24. (a) Chlorine occurs in nature in two isotopic forms with masses 35 u and 37 u in the ratio of 3:1. Calculate the average atomic mass of chlorine atom on the basis of this data.

(b) Give any three uses of three isotopes.

Or

(a) Write three points of difference between isotopes and isobars.

(b) Describe Bohr's model of the atom?

25. (a) Describe with diagram the oxygen cycle operating in nature.

(b) How depletion of ozone layer takes place?

Or,

(a) Define the following terms:

(i) Ammonification (ii) Nitrification

(iii) Denitrification

(b) State any two applications of green house effect.

SECTION B

26. The least count of a spring balance is 1 g wt. When it is suspended freely without any weight attached to the hook, the pointer is just in front of second small division on the scale. The zero error is

(a) –2 g wt (b) +2 g wt (c) Zero (d) +1 g wt

27. A student noted down the following observations in his note book:

(i) Weight of the stone in air = 272 g wt

(ii) Weight of the stone in water = 192 g wt

(iii) Weight of the stone in salty water = 176 g wt

The relative density of the salty water must be

(a) 11/12 (b) 11/17 (c) 13/17 (d) 6/5

28. A student lowers a body in a liquid filled in a container. He finds that there is a maximum apparent loss in weight of the body when

(a) It just touches the surface of the liquid (b) It is completely immersed in the liquid.

(c) It is partially immersed in the liquid.

(d) It is partially immersed and also touches the sides of the container

29. An object exerts a force F on a surface of surface area A. The pressure P acting on the surface is given by

(a) P = F/A (b) P = A/F (c) P = FA (d) P = F/A2

30. In the experiment of verification of reflection of sound, the incident sound is directed along

(a) Axis of tube. (b) Normal to the axis of the tube.

(c) At an angle of 30 from the axis of the tube. (d) At an angle of 45 from the axis of the tube.

31. A student while verifying laws of reflection of sound measured the angle between the incident sound wave and reflected sound wave as 110^{o}. The angle of reflection is

(a) 110 (b) 55 (c) 27 (d) 0

32. On which of the following factors does the speed of propagation of a pulse in a slinky not depend upon?

(a) Dimensions of slinky (b) Material of slinky

(c) Room temperature (d) Length of the slinky

33. Reverberation produced in large auditoriums is due to :

(a) Reflection of sound by windows. (b) Absorption of sound by walls.

(c) Reflection of sound by walls and ceiling. (d) Absorption of sound by floor.

34. During the experiment on measurement of loss in weight of solid in tap water and salty solution, the maximum loss in the weight of the body is observed when-

(a) it touches the surface of the liquid

(b) it is completely immersed in the liquid

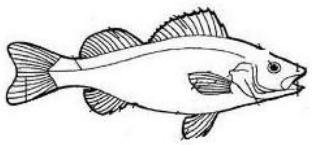
(c) it is partially immersed in the liquid

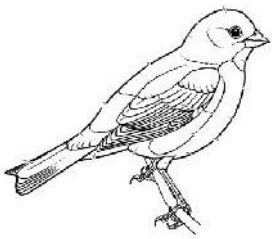
(d) no difference in loss in weight in above three cases.

35. Skin is kept moist in earthworms. It helps in

(a) Locomotion (b) Respiration (c) Protection (d) Both (a) and (b)

36. Observe the pictures of a bird and a bony fish. The feature that places them in the same phylum is :





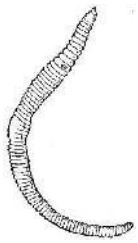
(a) pointed heads (b) bulky thorax (c) presence of scales (d) post anal tails

37. If we want to determine the volume of a solid by immersing it in water, the solid should be

(a) lighter than water (b) heavier than water

(c) insoluble in water (d) heavier than water and insoluble in it

38. In the figure of an earthworm given below, the horizontal lines, throughout the body represent:



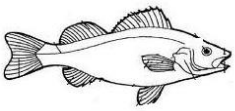
(a) Cells of the body. (b) Cell walls separating the cells of the body.

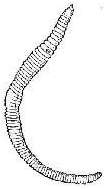
(c) Vertically arranged muscles of the body. (d) Septa separating segments of the body.

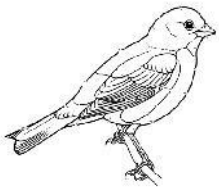
39. Rajiv found out the role of spiracle in a cockroach as:

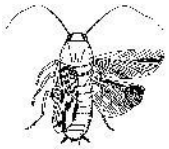
(a) Excretion (b) Circulation (c) Respiration (d) Movement

40. Which animal belongs to phylum Arthropoda?

A. 

B. 

C. 

D. 

(a) A (b) B (c) C (d) D

41. A specimen of a fish was given to students to identify the externally visible chordate feature in it. The student would look for:

(a) Operculum (b) notochord

(c) Dorsal tubular nerve cord (d) post anal tail

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