UNIVERSAL EDUCATION CENTRE
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Time 3Hrs   SCIENCE 9TH M.M. 90

1.The question paper comprises of two groups A and B. You are to attempt both the groups.

2. All questions are compulsory.

3. There is no overall choice. However, internal choice has been provided in all the four questions of five marks category. Only one option in such questions is to be attempted.

4. All question of group A and all question of group B are to be attempted separately.

5. Question numbers 1 to 10 in group A are one mark questions. These are to be answered in one word or one sentence.

6. Question numbers 11 to 20 are two marks questions to be answered in about 30 words each.

7. Question numbers 21 to 30 are three marks questions, to be answered in about 50 words each.

8.Question numbers 31 to 34 are five marks question to be answered in about 70 words each.

9. Question numbers 35 to 44 in group B are multiple choice questions, 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.

1) Define hydrosphere.

2) What is haemocoel ?

3) Write the symbol of element lead and iron.

4) Differentiate between health and disease.

5) style=""face="Verdana"size="2"What are the four main characteristics of chordates?

6) An object of mass 10kg is at a certain height above the ground. If the potential energy of the object is 200J , find the height of the object from the ground?

7) In what direction does the buoyant force on an object due to a liquid act? What is the relation of buoyant force with the density of a fluid?

8) An artificial satellite orbiting the earth in very thin atmosphere loses its energy gradually due to dissipation against atmospheric resistance, however small. So, its speed should be decreased, but actually its speed increases progressively as it comes closer and closer to the earth. Why?

9) Draw a neat and clean diagram of C-cycle.

10) The composition of two atomic particles is given below:

	A	B
Protons	6	6
Electrons	6	6
Neutrons	6	8

(a) What is the mass number of A and B?

(b) Which element/elements do they represent?

(c) What is the relation between A and B?

11) Name the causal organisms of Diarrhoea. Write its symptoms and preventive measures.

12) Differentiate between Poriferans and Coelentrates.

13) Give two exampes of Bryophytes and Pteridophytes.

14) What are pollutants? Give the different types of the air pollutants with example.

15) How does sound reaches our ears?

16) A bulb is lighted when it is connected to the battery. Explain the energy changes that take place in the process.

17) Write the name of the following compounds:

(a) $Ca_3(PO_4)_2$ (b) $NaHCO_3$ (c) $(NH_4)_2SO_4$ (d) $MgCO_3$ (e)$FeSO_4$ (f) $AlCl_3$

18) Atomic mass of element (A) is 24 and its atomic number is 12.

(i) Calculate the number of neutrons present in an atom of element (A).

(ii)How many electrons will be present in K, L and M energy shell of an atom of element (A)?

19) Calculate the density of iron if an iron cylinder of radius 14mm and length 80mm weighs 369.6g.

20) Calculate the number of atoms of each type in 2.65 g of Na_2CO_3.

OR

(i)Write the atomicity of the following:

(a) Ozone   (b) Chlorine   (c) Helium   (d) Sulphur   (e) Oxygen   (f) Phosphorous

(ii)Give one word answer

(a) The Latin name of iron from which its symbol is derived.

(b) An atom or group of atom having positive charge.

21) Two cars weighing 1500 kg are made to collide with a wall.The initial &final velocities of the car are - 15.0 m/s &2.6m/s respectively. If the collision lasts for 0.15 s, then find impulsive force exerted on the car.

OR

Define energy. Name the physical quantity that has same unit as that of energy.Four electrical appliances, each rated 500 W, run for 10 hours. Calculate the energy in kWh and joules.

22)What is an echo? Calculate the minimum distance in air required from a surface reflecting sound to hear an echo at $20^{o}C$

OR

Explain how defects in a metal block can be detected using ultrasound.

23) Point out differences between the following:

(a) Bony and cartilaginous fishes.   (b) Bilateral and radial symmetry.   (c) Notochord and nerve chord.

OR

Identify the below given organism and write four major characteristics of its phylum.

24) What are the various methods to control pollution?

OR

Describe the nitrogen cycle.

GROUP - B

25) When 100g of $CaCO_3$ is heated, it decomposes to yield 56g of CaO and 44g of CO_2. The law of chemical combination confirmed by the above statement is

(A) Law of conservation of mass.   (B) Law of multiple proportion.

(C) Law of constant proportion.   (D) Avogadro's law

26) A pulse is created in a stretched string as shown below.

When the pulse is at position X, the stop watch is started from its position A. When the pulse travelled back to its position X, the stop watch is stopped, as shown in position B. The speed of propagation of the pulse along the string is

(A) 10m/s.   (B) 1m/s.   (C) 0.1m/s.   (D) 0.05m/s.

27) Vanya performed an experiment to verify laws of reflection of sound. She joined two pipes for this. To get correct readings, she should

(A) close both the ends of the pipes.   (B) leave both ends of the pipes open.

(C) close the end of the pipe closer to the source of sound.   (D) close the end of the pipe closer to the observer.

28) A student while performing an experiment of reflection of sound followed the following steps:

Step 1: Placed two pipes at an angle to one another and placed a screen at their joint.

Step 2: Placed an alarm clock close to one pipe and placed his ear at the end of the other pipe.

Step 3: Removed the pipes and then drew the lines.

Step 4: Measured angle of incidence and angle of reflection.

The incorrect step is

(A) step 2.   (B) step 3.   (C) step 1.   (D) step 4.

29) *Spirogyra* is called so because
(A) pyrenoid is spiral.   (B) nucleus is spiral.   (C) chloroplasts are spiral.   (D) plasma membrane is spiral.

30) The procedure for the experiment to verify law of conservation of mass involves the following steps:
A) The mass of empty experimental set up is noted.
B) The mass of experimental set up with reactants is noted.
C) The mass of experimental set up after reaction with products is noted.
D) The difference of masses in (B) and (A) is noted.
The above said law is verified only if difference is
(A) +ve.   (B) -ve.   (C) zero.   (D) fractional.

31) In the experiment of law of reflection of sound, we should use
(A) two solid pipes.   (B) two hollow pipes.
(C) only one pipe which can be bent.   (D) a circular hollow pipe.

32) To determine the density of a solid by using spring balance and measuring cylinder, when we immerse the solid completely in water to calculate its volume, the
(A) initial reading of measuring cylinder should be subtracted from its final reading.
(B) final reading of measuring cylinder should be subtracted from its initial reading.
(C) initial reading of measuring cylinder should be added to its final reading.
(D) initial reading of measuring cylinder should be multiplied with its final reading.

33) In an experiment to determine the density of a solid, the solid should be hanged by
(A) a rubber with spring balance.   (B) a spring with spring balance.
(C) an inextensible thread with spring balance.   (D) an iron rod with spring balance.

34) In an experiment to determine the density of a solid, figure (i) shows the level of water before putting the solid into it and figure (ii) shows the level of water after putting the solid into it. The volume of solid is
(A) 150 ml.   (B) 230 ml.   (C) 250 ml.   (D) 80 ml.

35) In an experiment to determine the density of a solid, volume of
(A) water and mass of solid is required.   (B) solid and mass of solid is required.
(C) solid and mass of water is required.   (D) water and mass of water is required.

36) In an experiment to determine the density of a solid by using spring balance and measuring cylinder, solid should
(A) float on the surface of water.   (B) partly float on the surface of water.
(C) sink inside water.   (D) not be put inside water.

37) In an experiment to determine the density of a solid by using spring balance and measuring cylinder, the
(A) empty beaker should be hanged with spring balance.
(B) water filled beaker should be hanged with spring balance.
(C) solid mass should be hanged with spring balance.
(D) water filled beaker having solid mass inside it should be hanged with spring balance.

38) *Spirogyra* is soft to touch because it is
(A) covered by slime.   (B) has very thin covering.   (C) unbranched.   (D) has oil based covering.

39) The mode of nutrition in *Agaricus* is
(A) parasitic.   (B) autotrophic.   (C) saprotrophic.   (D) autonomous.

40) *Funaria* consists of
(A) saprophytic plant body differentiated in root, stem and leaves.
(B) saprophytic plant body in which the roots are replaced by rhizoids.
(C) gametophytic plant body which has rhizoids, axis and leaf-like lobes.
(D) gametophytic plant body which has foot, seta and capsules.

41) Rohan is trying to identify a plant that posses seeds but not fruits. It may belong to
(A) Pteridophyta.   (B) Gymnosperm.   (C) Bryophyta.   (D) Angiosperm.

42) Pinus varies from mango in
(A) colour of leaves.   (B) uncovered ovules.
(C) covered ovules.   (D) diploid endosperm.

ALL THE BEST