

**MAX. Marks: 80**

**TIMES: 3 Hrs**

**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. When an object moves on a circular path, what is the work done?
2. Write the unit of work?
3. What is the term given to increase in annual earth's temperature?
4. What is the percentage of nitrogen and oxygen in the air?
5. Give one achievement and one limitation of Thomson's model.
6. (a) Hydrogen and oxygen combine in the ratio of 1:8 by mass to form water. What mass of oxygen gas would be required to react completely with 3 g of hydrogen gas?  
(b) Write the molecular formula of a diatomic gas and a triatomic gas.
7. (a) Identify any two features possessed by Chordates.  
(b) In which class would you place an organism which has:  
(i) A scaly exoskeleton and a bony endoskeleton.  
(ii) A scaly exoskeleton and lay eggs outside water.
8. (a) Write two points of difference between amphibians and reptiles.  
(b) List two characters which help amphibians to survive on land.
10. (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 103 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. 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? ( $g = 10 \text{ m/s}^2$ )
- 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. A student while verifying laws of reflection of sound measured the angle between the incident sound wave and reflected sound wave as  $110^\circ$ . The angle of reflection is

- a)  $110^\circ$
- b)  $55^\circ$
- c)  $27^\circ$
- d)  $0^\circ$

27. 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

28. 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.

29. 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.

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

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

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  $300^\circ$ . The angle of incidence for the sound wave is

- (a)  $300^\circ$
- (b)  $600^\circ$
- (c)  $1200^\circ$
- (d)  $900^\circ$

35. When a boy shouts in front of a high hall, he hears his own voice after some time. 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. Earthworm has an unsegmented band called

- (a) Clitellum
- (b) Cephalothorax
- (c) Thorax
- (d) Metathorax

37. Which of the following belongs to thallophyta?

- (a) Pinus
- (b) Spirogyra
- (c) Fern
- (d) All of them

38. Cell wall of Agaricus is made up of:

- (a) Cellulose
- (b) Protein and fat
- (c) Chitin (d) Lignin

39. Body of the bony fish does not show gills as they are covered by

- (a) Scales
- (b) Operculum
- (c) Fins

(d) Skin

40. The number of wings in cockroach is

- (a) Two
- (b) Four
- (c) Six
- (d) None

41. Forelimbs in birds are:

- (a) Absent
- (b) Rudimentary
- (c) Modified into wings
- (d) Only hind limbs are present.

