Time allowed: **3 hours;** Maximum marks: **90**

General Instructions:

a) All Questions are compulsory
b) The Question Paper consists of 33 Questions divided in to four sections A, B, C and D
c) Section - A comprises of 3 Very Short Questions of 1 mark each
d) Section - B comprises of 3 Short Questions I of 2 marks each
e) Section - C comprises of 12 Short Questions II of 3 marks each
f) Section - D comprises of 6 Long Questions of 5 marks each
g) Section – E comprises of 9 Practical Based Very Short Questions of 1 mark each
h) Section – F comprises of 3 Practical Based Short Questions I of 2 marks each

Section – A

1. Write the formula for baking soda and Calcium Carbonate?
2. What does odometer of an automobile measure?
3. Define Formula unit mass. Give an example?

Section – B

4. Expand AIDS. State method of prevention?
5. Distinguish between loudness and intensity of sound?
6. Calculate the wavelength of a sound wave whose frequency is 230 Hz and speed is 440 m/s in a given medium?

Section – C

7. A, B and P belong to same period. Find the relation between their metallic properties following the given information?
   I. Atomic number of B is 12
   II. Formula of compound produced by A and B is BA_2
   III. P^{-2} and A^{-} have equal number of electrons
8. The wavelength of a sound wave is 1.72 m. How many times does it vibrate in a minute? (Take the speed of sound in air as 344 m/s)
9. What are the criteria used for divisions in plant kingdom and animal kingdom?
10. What is a disease? Classify disease based on duration and infection cause?
11. Write the electronic configuration and valency of following?
    i) Sodium
    ii) Silicon
    iii) Chlorine
12. A force of 30 N displaces a body by 10 m distance at an angle of 60° to its own direction .Calculate amount of work?
13. Calculate the molecular formula of Glucose with Empherical formula CH_2O.Calculate the molecular formula?
14. State Archimedes's principal. Give at least 2 applications based on it?
15. Give some examples to show the existence of Newton's third law of motion in our daily life?
16. An iron weight is used to strikes one end of a very long metal pipe. A detector at the other end detects two sounds at an interval of 4 s. Given the speed of sound in air and the speed of sound in metal is 300 m/s and 5100 m/s respectively, what is the length of the metal pipe?

17. Write the formula of calcium hydroxide?
18. What is molecule?

Section – D

19. What are the different means by which infectious diseases are spread?
20. What are the methods of preventing or reducing soil erosion?
21. A hockey ball of mass 200 g travelling at 10 ms-1 is struck by a hockey stick so as to return it along its original path with a velocity at 5 ms-1. Calculate the change of momentum occurred in the motion of the hockey ball by the force applied by the hockey stick?
22. Give reasons:
    i) Animals of phylum Platyhelminthes are called flatworms.
    ii) Bryophytes are called amphibians of plant kingdom.
    iii) Fungi are called saprophytes.
    iv) Bacteria and tapeworms are different in body structures.
    v) Plants like Pinus and deodar are called gymnosperms?
23. What is the importance of water, carbon and nitrogen for living organisms?
24. Which of the following correctly represents classification of Brassica campestries?

    A. Kingdom: Plantae
    Sub-kingdom: phanerogamae
    Division: Gymnospermae
    Class: Coniferae

    B. Kingdom: Plantae
    Sub-kingdom: phanerogamae
    Division:Gymnospermae
    Class: Cycadae

    C. Kingdom: Plantae
    Sub-kingdom: phanerogamae
    Division: Angiospermae
    Class:Monocotyledonae

    D. Kingdom: Plantae
    Sub-kingdom: phanerogamae
    Division: Angiospermae
    Class: Dicotyledonae

Section - E

25. Which law is used in the spring balance?
26. Relative density of a liquid is measured to be 0.7, it's density in SI unit is?
    A. 0.7 kg/m3
    B. 700 kg/m3
    C. 0.7 x 10(-3) kg/m3
    D. None of these
27. Which of the following is the respiratory structure of larva of the mosquito?
    A. Trachea

B. Lung
C. Malpighian tubule
D. Respiratory system

28. Depression in sand is directly proportional to?
A. Area
B. 1/ area
C. Weight
D. 1/ weight

29. A body is dipped in water and then in kerosene, it will weigh?
A. More in water
B. More in kerosene oil
C. Same in both case.
D. Cannot be determined

30. A tub full of water has ice floating in water with part of it outside water. When ice melts?
A. No water will flow out
B. Water will partly flow out
C. Water level in tub will fall
D. Nothing can be said with certainty

31. Density of water vapour is?
A. Equal to that of dry air
B. Less than that of dry air
C. More than that of dry air
D. Same as dry air

32. A cuboid is mounted on the top of an inverted pointed object, the pressure exerted by set up on sand?
A. Will increase
B. Will decrease
C. Will remain the same.
D. Will become half

33. 25 divisions on a measuring cylinder represent 50cm3, the least count of cylinder is?
A. 2 cm3
B. O.5 cm3
C. 0.005 cm3
D. 5 cm3

Section - F

34. When an object is kept on a liquid 2 forces act on it. Name the forces and their direction?
35. State the law of conservation of mass?
36. What is the atomicity of carbon dioxide?