TimeAllowed : 3.30Hrs   **M.M.: 90**

GENERAL INSTRUCTIONS:

(1)   The question paper comprises of three sections A, B and C. You have to attempt all the sections.
(2)   All questions are compulsory.
(3)   There is no choice in any question.
(4)   All questions of section A, B and C are to be attempted separately.
(5)   Q. no. 1-3 in section A are one marks questions and are to be answered in one word or one sentence only.
(6)   Q. no. 4-6 are two marks questions and are to be answered in about 30 words each.
(7)   Q. no. 7-18 are 3 marks questions and are to be answered in about 50 words each.
(8)   Q. no. 19-22 are five marks questions and are to be answered in about 70 words each.
(9)   Q. no. 23-31 are multiple choice questions based on practical based skills and each question carries one mark.
(10) Q. no. 33-34 are explanatory questions based on practical skills and each carry two marks.
(11) Q. no. 35-36 are based on OTBA. Marks are allotted in from of each question.

SECTION- A

1. Write the chemical formula of Ammonium Sulphate.

2. What is the unit of work?

3. Find the no. of valence electrons in sodium (Atomic No. 11).

4. What is difference between 2N and N_2?

5. Define Kinetic Energy. Write its S.I. Unit.

6. What are the two components of a scientific name?

7. Draw a labeled diagram of a member of Kingdom protista..

8. Write any there characteristics features of Kingdom Monera.

9. Write any three characteristics of Pteridophyta.

10. From the symbol $^{31}_{15}P$ statethe following :
    (i)   Mass number of phosphorus.
    (ii) Atomic number of phosphorus.
    (iii) Electronic configuration of phosphorus.

11. The relative density of iron is 7.8, if the density of water be 1.0×10^3 kg m^{-3} calculate density of iron in SI unit.

12. What are the differences between amphibians and reptiles?

13. (a) What is power?

    (b) A lamp consumes 1000 J of electric energy in 50 seconds. Calculate its power.

14. State the law of conservation of energy. Give two examples conservation of energy.

15. What do you understand by Buoyancy? Give the condition for an object to float or sink based on Buoyancy.

16. Flash and thunder are produced simultaneously. However, thunder is heard a few second after the flash is seen, Why?

17. A sound wave has a frequency of 2 kHz and wavelength 35 cm. How long will it take to travel 3.5 km?

18. Write the three basis for grouping organisms into 5 kingdoms.

19. (a) Calculate the formula unit masses of following compounds: (Given atomic masses Na = 23u, Ca = 40u, Cl = 35.5u, K = 39u, C = 12u, O = 16u.)

   (i) Na_2O
   (ii) $CaCl_2$
   (iii) K_2CO_3

   (b) What are canal rays?

20. (a) What is reverberation? How can it be reduced?

   (b) How does sound produced by school bell reach to you ear.

21. Define: Wavelength; Longitudinal Wave; Transverse Wave; Frequency; & Amplitude.

22. 'Jyoti' wants to eat leftover pieces of bread, which was two- three days old. Her mother asked her not to eat the piece of bread and showed cottony white patch on the bread.

   Answer the following questions:

   (i) What was cottony white patches?
   (ii) From where it has come on the piece of bread?
   (iii) From where they got food?
   (iv) In which kingdom they belong to?
   (v) Whether they help us in some way?

SECTION- B

23. The structure of moss plant that serve as roots are

   (a) Rhizoids
   (b) Seta
   (c) Capsule
   (d) None of these

24. Naked seeds are found in

   (a) Angiosperm
   (b) Gymnosperm
   (c) Pteridophytes
   (d) Bryophytes

25. Chemical formula of lead nitrate is

   (a) $Pb(NO_3)_2$
   (b) $Pb\ NO_3.$
   (c) $Pb_3(NO_3)_2$
   (d) $Pb(NO_3)_3$

26. Which of the following liquids has maximum density:

   (a) Water
   (b) Mercury
   (c) Alcohol
   (d) Ether

27. Sound waves produced by a source of sound are:

   (a) Longitudinal waves
   (b) Transverse waves

(c) Both a & b

(d) Electromagnetic waves.

28. Which of the following liquids has maximum density:

(a) Water

(b) Mercury

(c) Alchohal

(d) Ether

29. Pressure is defined as:

(a) Thrust/ Area

(b) Area/ Thrust

(c) Thrust x Area

(d) Mass / Area.

30. A body of mass 100gm is floating in water, the result recorded for the apparent weight by the student are as follows:

(a) 200gm wt.

(b) 100 gm wt

(c) More than 100 gm wt

(d) O gm wt.

31. The instrument used to measure the mass of substance is :

(e) A physical balance

(f) A spring balance

(g) Both a & b.

(h) None of the above.

32. There are two solid substances 'A' and 'B' of mass 100 g each. The volume of substance 'A' is more than the volume of substance 'B'

(i) Which substance 'A' or 'B' have more density? Why?

33. A student went to the field and picked out one wheat plant and one mustard plant along with their root and found differences between them.

(i) Which plant have tap root system?

(ii) Which plant is monocotyledon plant?

34. A student took the solution of barium chloride and sodium sulphate and mixed in a conical flask.

(i) Name the resulting products formed in this reaction.

(ii) What will be the colour of precipitate?

SECTION- C
OTBA

S.NO.	EXPECTED ANSWER	MARKS
1.	(NH4)2SO4	1
2.	Newton meter Nm or Joule(j)	1
3.	3 electrons	1
4.	2N represents 2 separate atoms of nitrogen N2 represents 1 molecule contains two atoms	1+1
5.	Energy possed by the body due to its motion. Unit : joule.	1+1
6.	Species and genus	1+1
7.	Labeled diagram of organism	3
8.	Any three characters features of monera	1+1+1
9.	Any three characters of Pteridophyta	1+1+1
10.	Mass Number: 31 Atomic No. : 15 Electronic configuration of P: 2,8,5	1 1 1
11.	Correct Formula Calculation with answer: 7.8×10^3 Kgm^{-3} or 7800 Kgm^{-3}	1 2
12.	Any three differences	1+1+1
13.	Correct definition Formula P= W/t = 200 J/sec or Watt	1 2
14.	Correct Law Two Examples (1 Marks each)	1 2
15.	Definition of Buoyancy Any two conditions	1 2
16.	Because Light travels faster than sound in air	3
17.	Formula 50second	1 2
18.	Any three basis of classification	1+1+1
19.	62u,111u 138u	1+1+1
20.	Definition,any two reason Any reason	4+1
21.	Definition of each	1+1+1+1+1
22.	i. Fungi ii. Air iii. Dead and decaying materials iv. Fungi v. Making bread and alcohol	1 1 1 1 1
23.	A	
24.	B	
25.	A	
26.	C	
27.	C	
28.	A	
29.	D	
30.	B	
31.	A	
32.	B have more density, lesser the volume, more density when mass is same	2
33.	i. Mustard plant ii. Wheat plant	1 1
34.	Barium chloride, Barium sulphate White ppt	1 1