

संकलित परीक्षा - II
SUMMATIVE ASSESSMENT - II (2015-16)
SCIENCE/विज्ञान

Class - IX/कक्षा - IX

विद्यार्थित समय : 3 घण्टे

Time allowed: 3 hours

अधिकतम अंक : 90

Maximum Marks: 90

General Instructions :

- The question paper comprises of three Sections, A, B and C. You are to attempt all the sections.
- All questions are compulsory.
- All questions of Section-A, Section-B and Section-C are to be attempted separately.
- Question numbers 1 to 3 in Section-A are one mark questions. These are to be answered in one word or in one sentence.
- Question numbers 4 and 5 in Section-A are two marks questions. These are to be answered in about 30 words each.
- Question numbers 6 to 16 in Section-A are three marks questions. These are to be answered in about 50 words each.
- Question numbers 17 to 21 in Section-A are five marks questions. These are to be answered in about 70 words each.
- Section B has 3 OTBA questions. Question number 22 is two marks, Question number 23 is three marks and Question number 24 is five marks question.
- Question numbers 25 to 33 in Section-C are multiple choice questions based on practical skills. Each question is a one mark question. You are to select one most appropriate response out of the four provided to you.
- Question numbers 34 to 36 in section C are two marks questions based on practical skills. These are to be answered in about 30 words each.

SECTION-A

1 State the "Law of constant proportions".

2 Write the name of the sub-atomic particle discovered by J. Chadwick. What type of charge occurs on this particle?

3 What are vectors? Give one example.

4 Can multiple echoes of a single sound be produced? Give example to justify your answer.

5 Establish the relation between kWh and joules. Define 1 watt.

6 What are ions? Write the formulae of two divalent cations and anions each.

7 An element is represented as ${}^A_Z X$. Find :

- The number of electrons in element X.
- Mass number of an element X.

Mg
12
SO₄²⁻

(c) The number of neutrons in element X.

8 On the basis of the number of protons, neutrons and electrons in the samples given below find 3

Sample	Protons	Neutrons	Electrons
A	19	20	16
B	18	19	18
C	17	20	17
D	17	17	17

- (a) the cation
(b) the pair of isobars and
(c) the pair of isotopes.
Also give reason in each case.

9 Mention any three important features of phylum Echinodermata. 3

10 Name an antibiotic that blocks the biochemical pathways for bacteria. Explain the effect of this antibiotic on bacteria. 3

11 Classify the following organisms into their respective kingdoms as per Whittaker's five kingdom classification :
Amoeba, Euglena, Birds, Herbs, Cats, Lactobacillus. 3

12 A block of wood of mass 5 kg and dimensions 40 cm × 25 cm × 10 cm is placed on a table top. Find the pressure exerted if the block lies on the table top with sides of dimension 3

- (a) 10 cm × 25 cm
(b) 40 cm × 10 cm

13 (a) How temperature affects the velocity of sound? 3

(b) Define velocity of sound and time period.

14 Identify and state the type of transformation of energy in the following cases : 3

- (a) when coal is burnt
(b) when a dry cell discharges
(c) in a thermal power plant.

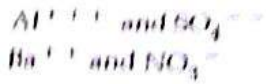
15 State Archimedes's Principle. Explain its two applications. 3

16 Kumar and Gunwant were waiting to go across a railway crossing Kumar jumped over the barrier and curiously put his ear on the railway track. Gunwant opposed Kumar and pulled him away from the railway track. 3

- (a) Why did Kumar put his ear on the railway track?
(b) In which of the following mediums the sound travels faster :
(i) Copper (ii) Water
(c) Why did Gunwant pull Kumar away from the railway track?

17 (a) What are molecules? Using examples differentiate between the molecule of an element and a compound. 5

(b) Derive the chemical formulae of the molecules formed between the following ions :



18 What is the importance of having scientific names of organisms? Which sub-groups of classification form part of the scientific name? What is this system of nomenclature called and why? State scientific name of man. 5

19 Differentiate between the following; 5
 (a) Acute disease and Chronic disease
 (b) Infectious disease and Non-infectious disease
 (c) Symptom based treatment and Microbe based treatment
 (d) Antibiotics and Vaccines
 (e) Congenital disease and Acquired disease

20 (a) Define work. Give SI unit of work. Write an expression for positive work done. 5
 (b) Calculate the work done in pushing a cart through a distance of 50 m against the force of friction equal to 250 N. Also state the type of work done.
 (c) Sarita lives on 3rd floor of building at the height of 15 m. She carries her school bag weighting 5.2 kg from the ground floor to her house. Find the amount of work done by her and identify the force against which she has done work. ($g = 10 \text{ ms}^{-2}$)

21 (a) Define relative density. Give its mathematical expression. $D = \frac{\rho_{\text{substance}}}{\rho_{\text{water}}}$
 (b) Define density. Give its SI unit. $\rho = \frac{m}{V}$
 (c) A solid weighs 80 g in air and 64 g in water. Calculate the relative density of solid. $\frac{80}{16} = 5$
 (d) When kept in water, state if the object would float or sink? $D = 5 > 1$ so it sinks.

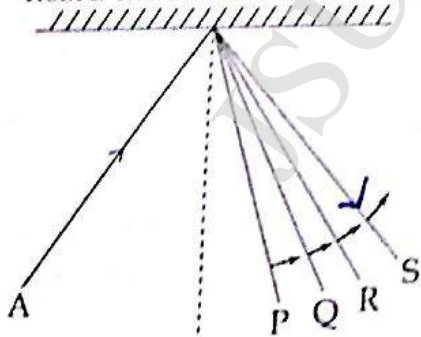
SECTION - B (OTBA)

(* Please ensure that open text of the given theme is supplied with this question paper.)
Conservation of Water Bodies

22 'Water water everywhere, But no water to drink'. What do you understand by this statement? 2
 23 Lakes are socially beneficial. Give at least three points in favour of this statement. $\frac{1}{3} \times 80 = 80$
 4 Water is essential for all organisms and we should conserve it. Which scheme is implemented to support this statement. State and explain its objectives. 5

SECTION - C

In which of the positions shown in the diagram, the sound from source placed at A will be heard the loudest after reflection from the reflecting surface?



if 5

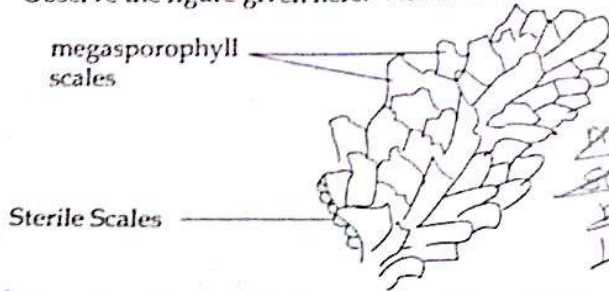
Handwritten calculations:
 $\frac{80}{100} \times \frac{600}{64} = \frac{m}{v}$
 $\frac{80}{16} = 5$
 Denominator 64

- (a) P (b) Q (c) R (d) S

26 Hari places an iron cuboid of mass 'm' of dimensions 10cm x 15cm x 5 cm on the loose sand. The ratio of minimum to maximum pressure exerted by the iron cuboid on sand is :
 (a) 3/1 (b) 1/3 (c) 1/2 (d) 2/1

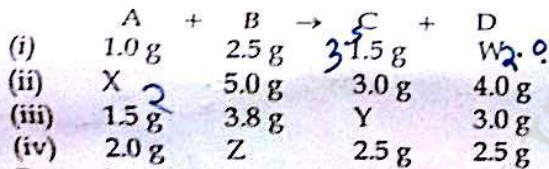
27 If a pulse generated moves through a distance d towards fixed end and reflect back in time interval of t seconds, then which formula out of these will be used to find velocity ?
 (a) $v = d/t$ (b) $v = 2d/t$ (c) $v = t/d$ (d) $v = 2t/d$

28 Observe the figure given here. Which of the following does it represent ?



- (a) Female cone of pinus (b) Male cone of pinus
 (c) Rachis of Fern (d) Annulus of Agaricus

29 Observe the following reactions occurring with the different masses of A, B, C and D.



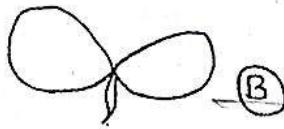
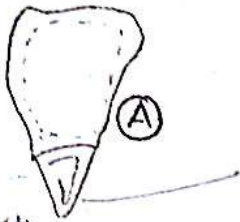
By applying law of conservation of mass, the correct values of W, X, Y and Z are given in :

- | | | | | |
|-----|-------|--------|---------|--------|
| | W/(i) | X/(ii) | Y/(iii) | Z/(iv) |
| (a) | 2.0 g | 3.0 g | 2.0 g | 2.3 g |
| (b) | 2.0 g | 2.0 g | 2.3 g | 3.0 g |
| (c) | 2.0 g | 2.3 g | 2.0 g | 3.0 g |
| (d) | 3.0 g | 2.0 g | 3.0 g | 2.3 g |

30 According to the law of conservation of mass :

- (a) initial mass of reactants is more than the final mass of products
 (b) initial mass of reactants is less than the final mass of products
 (c) initial mass of reactants is equal to the final mass of products
 (d) there is no relation between initial mass of reactants and the mass of products formed.

31 Read the observation and tick the correct option about A and B seeds.



- (a) Seed A is dicotyledonous and B is monocotyledonous
(b) Seed A is monocotyledonous and B is dicotyledonous
(c) Both A and B are monocotyledonous seeds
(d) Both A and B are dicotyledonous seeds

32 From the plants given below the plant in the leaves of which reticulate venation is found is : 1
(a) Maize (b) Rose
(c) Lily (d) Bamboo

33 Blood sucking part of the female mosquito is known as 1
(a) Palpus (b) Proboscis
(c) Antenna (d) Culex

34 Explain how bat uses ultrasound to catch his prey. 2

35 In an experiment a metal ball weighs 2N in air and 1.5 N when immersed completely in water. 2

36 What is the magnitude of the buoyant force acting on it? 2
Enumerate any two adaptive features of Earthworm.

