KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION – 32
SAMPLE PAPER 04 FOR SA – II (2016–17)

SUBJECT: SCIENCE

BLUE PRINT : SA–II CLASS IX

Unit/Topic	VSA/MCQ (1 mark)	Short answer (2 marks)	Short answer (3 marks)	Long answer (5 marks)	Total
Atoms and Molecules	2(2)	2(1)	3(1)	--	**07(4)**
Structure of Atoms	--	2(1)	9(3)	--	**11(4)**
Biological Diversity	5(5)	2(1)	3(1)	5(1)	**15(8)**
Health and Diseases	1(1)	2(1)	3(1)	5(1)	**11(4)**
Gravitation (Flotation)	3(3)	--	3(1)	5(1)	**11(5)**
Work and Energy	--	2(1)	6(2)	5(1)	**13(4)**
Sound	1(1)	--	6(2)	5(1)	**12(4)**
Natural Resources *	--	2(1)	3(1)	5(1)	**10(3)**
Total	**12(12)**	**12(6)**	**36(12)**	**30(6)**	**90(36)**

*Note: The material for Open Text Based Assessment (**OTBA**) for SA-II will be from Unit - IV: Our Environment (Natural Resources). This unit will be tested through **OTBA** only.

MARKING SCHEME FOR SA – II

SECTION	MARKS	NO. OF QUESTIONS	TOTAL
VSA	1	3	03
SA – I	2	3	06
SA – II	3	12	36
LA	5	6	30
Practical based MCQs	1	9	09
	2	3	06
GRAND TOTAL			**90**

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|	
SUBJECT: SCIENCE	**MAX. MARKS : 90**
CLASS : IX	**DURATION : 3 HRS**

General Instructions:
1. All questions are compulsory.
2. The question paper comprises of **two Sections, A** and **B.** You are to attempt both the sections.
3. All questions of **Section-A** and **Section-B** are to be attempted separately.
4. Question numbers **1 to 3** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.
5. Question numbers **4 & 5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.
6. Question numbers **6 to 16** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.
7. Question numbers **17 to 21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.
8. **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.
9. 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.
10. Question numbers **34 to 36** in **Section-C** are questions based on practical skills and are **two marks** questions.

SECTION – A

1. What is the criterion for classification of organisms as belonging to kingdom Monera or Protista?

2. How do the saprophytes get their food? Give an example of a saprophyte.

3. What is the difference between symptoms and signs of a disease?

4. (a) Write down the name of compounds represented by the following formulae:
   (i) $Ca(OH)_2$ (ii) K_2SO_4
   (b) Give two examples of bivalent cations.

5. Why are we normally advised to take bland and nourishing food when we are sick?

6. (a) Explain what do you understand by Avogadro's constant?
   (b) Calculate the number of moles for 56 g of Ne.

7. (a) State the limitations of J.J. Thompson's model of an atom
   (b) Define valency by taking the example of magnesium (Atomic number = 8) and oxygen (Atomic number = 8)
   (c) S^{-2} has completely filled K, L and M shells. Find its atomic number.

8. (a) What are the postulates of Bohr's atomic model?
   (b) Who discovered neutron?
   (c) Name the Scientist who concluded that the size of nucleus is very small as compared to the size of an atom.

9. Explain giving reasons –(a) Balanced diet is necessary for maintaining health body. (b) Health of an organism depends upon the surrounding environmental conditions.

10. Explain the basis for grouping organisms into five kingdoms.

11. (a) The volume of 40 g of a solid is 15 cm³. If the density of water is 1 g cm³, will the solid float or sink? State reason.
(b) Why is it easier to lift a heavy stone under water ?

12. You are given an element $_8^{16}X$. Find out
(a) Number of protons, electrons and neutrons in 'X'.
(b) Valency 'X'.
(c) Write the chemical formula of the compound formed when 'X' reacts with (i) hydrogen (ii) carbon

13. Calculate the kinetic energy of a car of mass 750 kg moving with a velocity of 54 km/h. Find the new kinetic energy of the car if a passenger of mass 50 kg sits in the car.

14. What is reverberation ? How can it be reduced ? Give two applications of reflection of sound wave.

15. Define 1 watt of power. A lamp consumes 1000 J of electrical energy in 10 s. Calculate its power.

16. Mukul is a student of class VI. Once he was suffering from cold and cough. His mother took him to a doctor. The doctor examined him with the help of a 'Stethoscope'. On returning home, he asked his elder brother Shubham about the Stethoscope.
(a) What is Stethoscope ? State its application.
(b) Name any other device which works on the same principle as being utilised in a Stethoscope.
(c) What quality is shown by Mukul and his brother Shubham.

17. Label A to H in the given diagram of hydra.
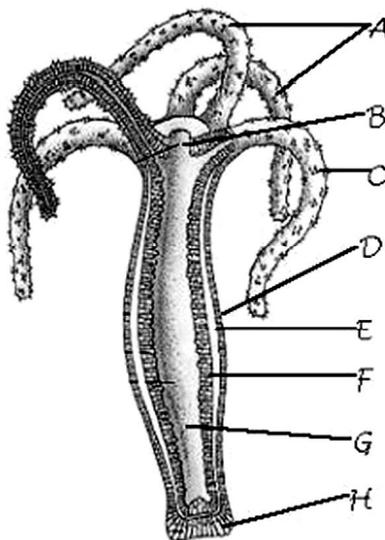
18. (a) Write full form of SONAR. Mention the principle on which its working is based. Write the three information about underwater objects, that are obtained with its application.
(b) A detector installed on a ship receives an ultrasonic signal sent to underwater object after 't' seconds of its transmission. If the speed of sound in water is 'v', what is the depth of the depth.

19. What do the sign and symptoms indicate if person is suffering from any disease? Based on the duration of diseases what is the difference between categories of diseases? Differentiate between them giving one example of each.

20. Calculate the electric bill amount for a month of 30 days, if the following devices are used as specified: (Given the cost if electricity is Rs. 3 per unit)
(a) 2 bulbs of 40 W for 6 hours
(b) 2 tubelights of 50W for 8 hours.
(c) a TV of 120 W for 6 hours

21. (a) State Archimedes' Principle. Write two applications based on this principle.
(b) Why does a block of plastic released under water come up to the surface of water?
(c) The volume of 50 g of a substance is 20 cm3. If the density of water is 1 gcm^{-3}, will the substance float or sink?

SECTION – B (OTBA)
(THEME –1 : SOLID WASTE MANAGEMENT - HOW TO BRING BEST OUT OF WASTE?)

22. Waste management can help in improving the health status of our country. Justify the statement.

23. Rag pickers act as saviors for municipal corporations. Elaborate on their role in waste management.

24. Suggest any one strategy for effective waste management being used in your area/ locality/school.
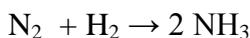
SECTION – C

25. Which of the following reaction is not suitable to verify the law of conservation of mass in chemical reaction?
(a) Precipitation reaction   (b) Displacement reaction
(c) Redox reaction   (d) Nuclear reaction

26. Four students sketched after observing the permanent slide of spirogyra as shown below:
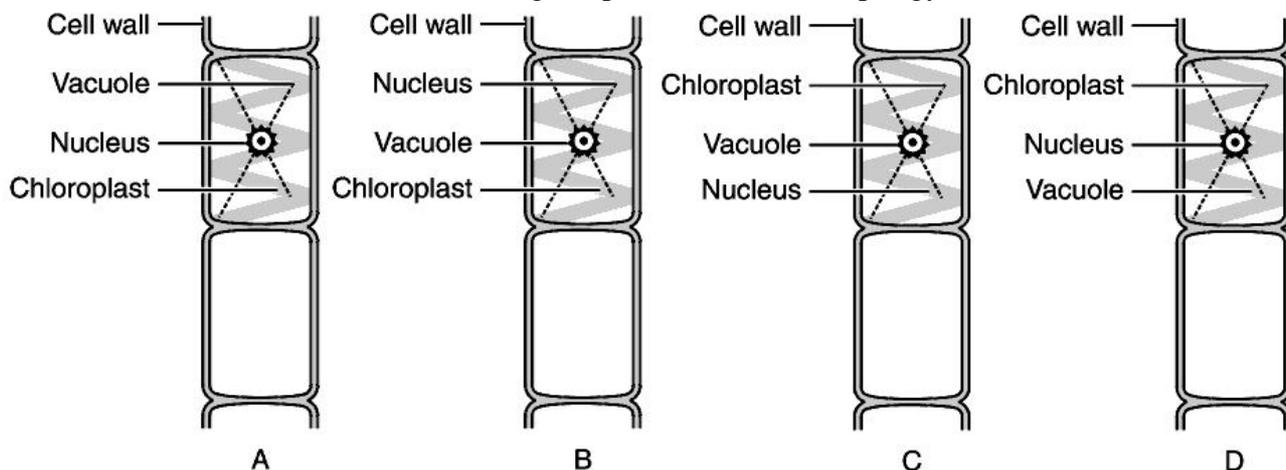
The correct labelled diagram is:
(a) A   (b) B   (c) C   (d) D

27. For the following chemical equation, if the law of conservation of mass is correct, what would be the number of H_2 molecules?
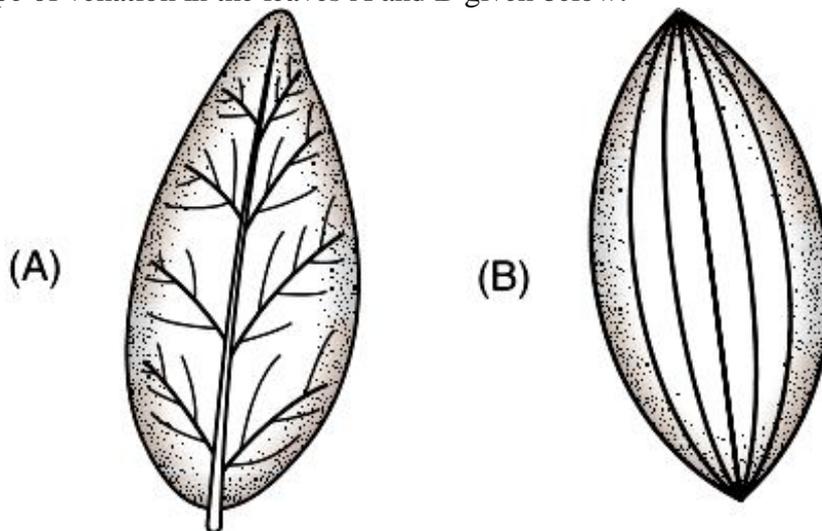$$N_2 + H_2 \rightarrow 2\ NH_3$$
(a) 2   (b) 3   (c) 4   (d) 6

28. For a floating body (B= Buoyant firce, W = weight of the floating body):
(a) B = W   (b) B > W
(c) B < W   (d) Information is incomplete.

**29.** Identify the type of venation in the leaves A and B given below:

(a) A has parallel venation and B has reticulate venation
(b) A and B has reticulate venation
(c) A and B has parallel venation
(d) A has reticulate venation and B has parallel venation

**30.** When a body fluid immersed in a liquid, it undergoes an apparent:
(a) loss in its volume
(b) loss in its weight
(c) loss in its mass
(d) no loss in any respect

31. Identify the part 'x' of cockroach and label it.

(a) Spiracles   (b) Antennae
(c) Appendages/ legs   (d) Wings
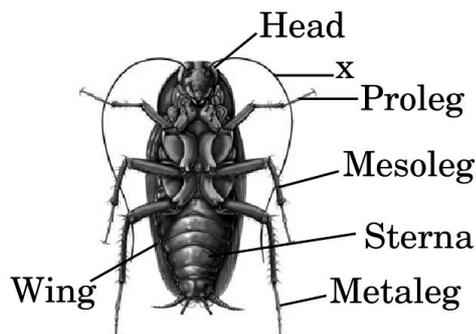
32. To verify the laws of reflection of sound, Aditi sets up her apparatus as shown in the given diagram. Her experiment will be performed successfully if the :
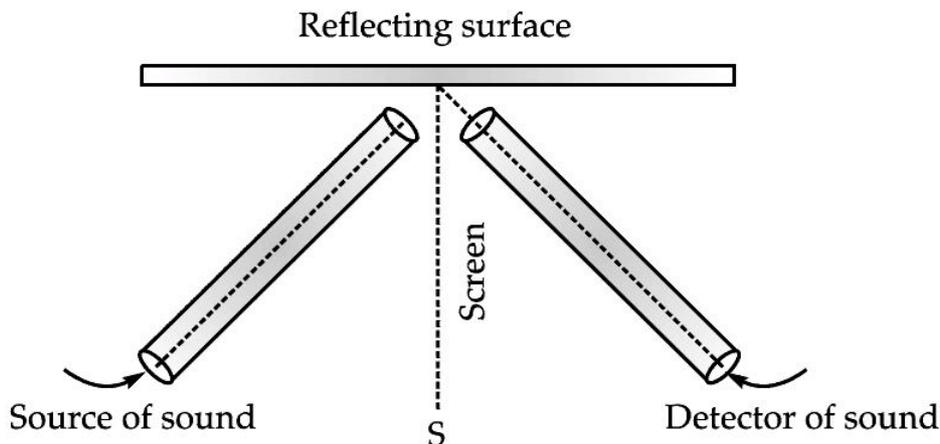
(a) reflecting surface is a cemented wall and screen is a foam-padded board.
(b) reflecting surface is a foam-padded board and screen is a cemented wall.
(c) reflecting surface is a wooden board with many holes in it and screen is a sheet of white cloth.
(d) reflecting surface is a sheet of white cloth and screen is a wooden board with many holes in it.

33. A girl stands on a box having 60 cm length, 40 cm breadth and 20 cm width in three ways. In which of the following cases, pressure exerted by the brick will be
(a) maximum when length and breadth form the base
(b) maximum when breadth and width form the base
(c) maximum when width and length form the base
(d) the same in all the above three cases

34. A person holding a suitcase on his head is standing at the platform. Is he doing any work? Comment.

35. Draw a diagram of earthworm and label clitellum on it.

36. Give one word for the following:
(a) positively charged atom
(b) a group of atoms carrying a charge