

KENDRIYA VIDYALAYA SANGATHAN, HYDERABAD REGION - 32
SAMPLE PAPER 02 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)	--	3(1)	5(1)	10(4)
Structure of Atoms	2(2)	--	6(2)	--	08(4)
Biological Diversity	4(4)	2(1)	3(1)	5(1)	14(7)
Health and Diseases	1(1)	--	6(2)	5(1)	12(4)
Gravitation (Flotation)	1(1)	6(3)	3(1)	--	10(5)
Work and Energy	--	--	9(3)	5(1)	14(4)
Sound	2(2)	2(1)	3(1)	5(1)	12(5)
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. State the postulate of Dalton's atomic theory which indicates the law of constant proportions.
2. What was Bohr's postulate on revolution of electrons in the orbits of atom ?
3. Name any two groups of microorganisms from which antibiotics can be extracted.
4. Define relative density. What is the density of silver given that its relative density is 10.3 ?
5. A person hears an echo from the top of a tower, 2.2 seconds after the sound is produced. How far away is the tower from the person ? Speed of the sound in air is 332 m /s.
6. If number of electrons in an atom is 8 and number of protons is also 8, then (i) what is the atomic number of the atom? and (ii) what is the charge on the atom?
7. State three features of the nuclear model of an atom put forward by Rutherford.
8. A compound XH is formed by combination of an element 'X' with hydrogen. Find the valency of element 'X'. State the formula of the compounds formed by combination of:
(a) X with nitrogen
(b) X with oxygen
9. How is the criteria for deciding divisions in plant kingdom different from the criteria for deciding the sub-groups among animals ?
10. What is the role of the immune system, when a disease causing microbe enters the healthy human body ?

- 11.** Given below are few situations:
- Geeta of Class IX was having common cold. She sits with Sarika who also develops the diseases.
 - Animesh of Class IX shifted to a new residence, with his family, where water purification system has not been installed yet. He develops cholera and dysentery.
 - Associate these situations with their mode of transmission and assign appropriate category to them.
- 12.** (a) Name the type of energy possessed by a moving object. Write its SI unit.
(b) Derive the expression for this energy for an object moving with velocity v and having m .
- 13.** (a) If atmospheric pressure is 1.01×10^5 Pa, then how much force does the air in a room exert on the inside of a window pane which is 50 cm x 100 cm?
(b) Mention any two factors affecting the buoyant force.
- 14.** What is 'Ultrasound' ? Explain how defects in a metal block can be detected using ultrasound.
- 15.** (a) A household has a 100 W lamp lighted for 2 hours, two 60 W lamps lighted for 4 hours and an electric fan of 50 W working for 8 hours a day. Calculate the electric units consumed each day.
(b) What energy transformation takes place in :
(i) Dry cell (ii) Electric fan
- 16.** Ritwick's family received a heavy electricity bill and decided not to pay it. His friend Sujoy explained them the importance of paying all bills on time and suggested some methods to reduce the units consumed in future.
- Write the commercial unit of Electrical energy.
 - What is its relation with the SI unit of energy ?
 - What quality of Sujoy do you observe from his suggestions ?
 - List any two ways you practice at home to save electricity.
- 17.** (a) Write down the chemical formulae of the following compounds:
(i) Magnesium nitride (ii) Calcium nitrate (iii) Sodium nitrite
(b) Find the number of atoms present in :
(i) SO_2 molecule
(ii) SO_4^{2-} ion.
- 18.** Give reasons:
- Animals of phylum platyhelminthes are called flatworms.
 - Bryophytes are called amphibians of the plant kingdom.
 - Fungi are called saprophytes.
 - Bacteria and tapeworms are very different in their body design.
 - Plants like Pinus and Deodar are called gymnosperms.
- 19.** What is a disease? How do we know that a person is diseased? What can be the various causes for a person getting disease?
- 20.** (a) Name the three bones in our middle ear, which help in amplifications of the vibrations of sound.
(b) Give the audible range of human ear.
(c) Name that part of the human ear which helps in converting pressure variations into electric signals. How brain interprets them as sound ?

21. (a) Name two forms of mechanical energy.
 (b) Calculate the work required to be done to stop a car of 1500 kg moving at a speed of 54 km/h.
 (c) A body of mass 1.5 kg is thrown vertically upwards with an initial velocity of 30 m/s. What will be its potential energy at the end of 3 s ? ($g = 10 \text{ m/s}^2$)

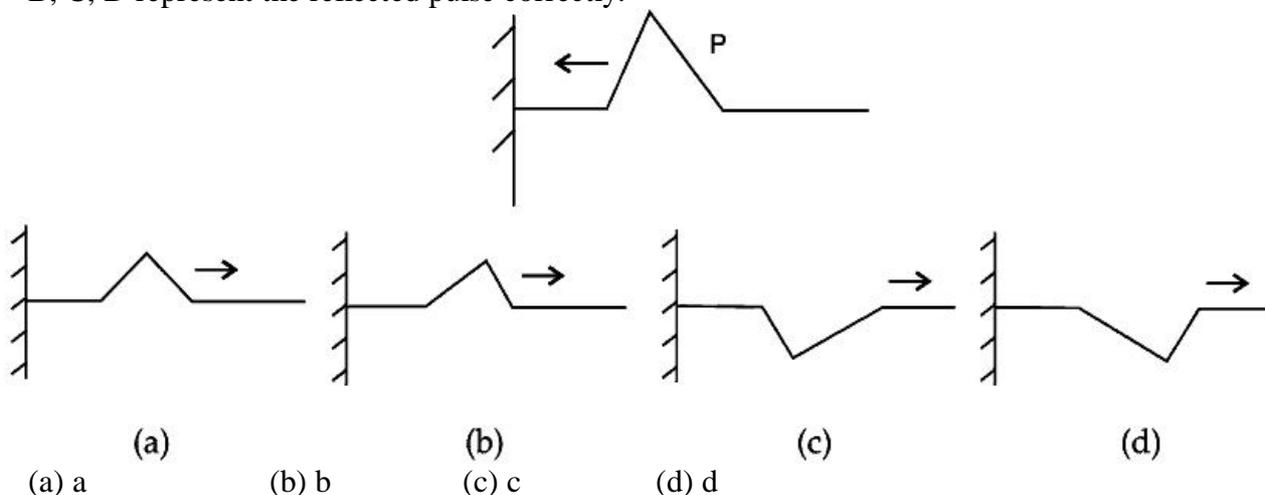
SECTION – B (OTBA)

(THEME –2 : HEALTHY ENVIRONMENT, HEALTHY PEOPLE)

22. Name a chemical that is frequently used in plastic bottles. How it is harmful to human beings?
23. Arrange below given diseases with their decreasing ratio of disease burden in comparison to environmental factors: Lower respiratory infections, cardio-vascular diseases, Road traffic injuries. Give their environmental sources.
24. An unhealthy, polluted environment does not only have adverse effect on the people of the present generation, but it can also put the life of subsequent generations at risk. Explain how.

SECTION – C

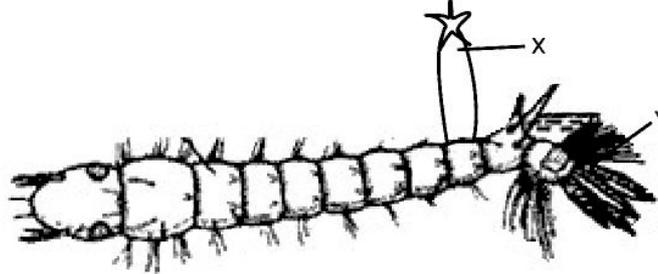
25. Bouncing back of sound into the same medium when it strikes any hard surface is :
 (a) Refraction (b) Reflection
 (c) Either (a) or (b) (d) Reverberation
26. The figure given below shows an incident pulse P reflected from a rigid support. Which out A, B, C, D represent the reflected pulse correctly:



27. Organisms without nucleus and cell organelles belong to
 (i) fungi
 (ii) protista
 (iii) cyano bacteria
 (iv) archae bacteria
- (a) (i) and (ii)
 (b) (iii) and (iv)
 (c) (i) and (iv)
 (d) (ii) and (iii)

28. The relationship between pressure and area is:
- It is directly proportional to square of area
 - It is directly proportional to area
 - It is inversely proportional to area
 - It is inversely proportional to square of area

29. The correct labels for X and Y in the diagram drawn below are:



- X : respiratory siphon, Y : air floats
 - X : respiratory siphon, Y : tracheal gills
 - X : tracheal gills, Y : respiratory siphon
 - X : air floats, Y : respiratory siphon
30. A student noted down the following precautions for the experiment “To verify the law of conservation of mass in a chemical reaction”.
- Weighing should be done carefully.
 - Flask should be corked tightly.
 - Solutions should not get mixed before the reaction.
 - Mixing of two solutions must be done quickly.
- The precaution which needs to be corrected is:
- (i)
 - (ii)
 - (iii)
 - (iv)
31. When a chemical reaction between aqueous silver nitrate and aqueous sodium chloride is carried out, white precipitates of silver chloride are formed. The above reaction is an example of:
- Displacement reaction
 - Double displacement reaction
 - Decomposition reaction
 - Combination reaction
32. Meena and Hari observed an animal in their garden. Hari called it an insect while Meena said it was an earthworm. Choose the character from the following which confirms that it is an insect.
- Bilateral symmetrical body
 - Body with jointed legs
 - Cylindrical body
 - Body with little segmentation
33. Which among the following has specialised tissue for conduction of water?
- Thallophyta
 - Bryophyta
 - Pteridophyta
 - Gymnosperms
- (i) and (ii)
 - (ii) and (iii)
 - (iii) and (iv)
 - (i) and (iv)

34. In an experiment when an object is immersed in water, what does the volume of the displaced water indicate ? While taking the reading of the level of water in a measuring cylinder what should be the position of eye ?
35. When an object is kept on a liquid, then two forces act on it. Name the two forces and their directions.
36. Label a, b, c and d. given in below figure.

