21 March 2017 **Set-B**

SUMMATIVE ASSESSMENT – II (2016-17)

SCIENCE

Class – IX

Time allowed: 3 hours **Maximum Marks: 90**

General Instructions :

(i) The question paper comprises of **three Sections, A, B and C**. You are to attempt all the sections.

(ii) **All** questions are **compulsory**.

(iii) **All** questions of **Section-A, Section-B and Section-C** are to be attempted separately.

(iv) Question numbers **1** to **3** in **Section-A** are **one mark** questions. These are to be answered in **one word** or in **one sentence**.

(v) Question numbers **4** and **5** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.

(vi) Question numbers **6** to **16** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.

(vii) Question numbers **17** to **21** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.

(viii) 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.

(ix) 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.

(x) 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.

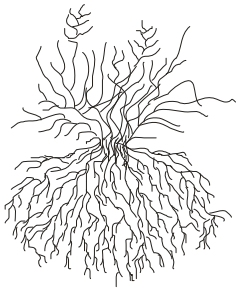
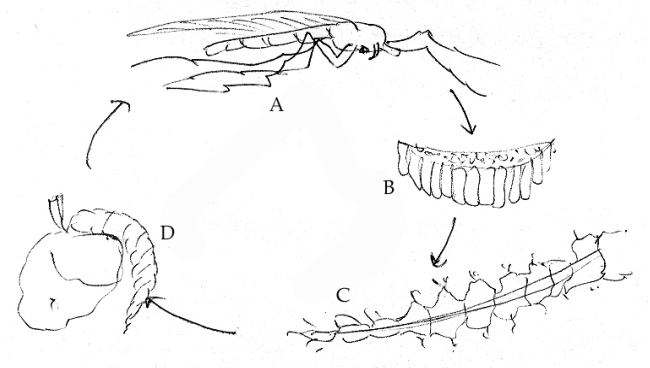
SECTION-A

1	Which atom was chosen as the standard reference for measuring atomic masses in the year 1961 ?	1
2	An element X has only one proton and one electron in its atom. Name the element X.	1
3	Why do you think that a plant cell is categorised under eukaryotic cell ? Give two reasons.	1
4	The mass of an iron cube having an edge length 1.8 cm is 70 g. Find its density.	2
5	Explain in brief the working of the megaphone.	2
6	List the observations in α-pasticle scattering experiment which led Rutherford to make the following conclusions : (i) Most of the space in an atom is empty. (ii) Whole mass of an atom is concentrated in its centre. (iii) Centre is positively charged.	3
7	In a chemical reaction, 10.6 g of sodium carbonate reacted with 12 g of ethanoic acid. The products obtained were 4.4 g of carbon dioxide, 16.4 g of sodium ethanoate and 1.8 g of water. (a) Write a word equation, clearly showing the reactants and products as given above. (b) Also show that this data is in agreement with the law of conservation of mass.	3

8	(a) Define atomicity. (b) State the atomicity of the following molecules : (i) Oxygen (ii) Phosphorous (iii) Sulphur (iv) Argon	3
9	Differentiate between infectious and non-infectious diseases (any three differences).	3
10	State any three differences between cryptogamae and phanerogamae.	3
11	Explain how the infectious diseases are prevented by general methods.	3
12	Find the ratio of the pressure exerted by a block of 200N when placed on a top of the table along its two different sides with dimensions 20 cm × 15 cm and 30 cm × 15 cm.	3
13	Explain three industrial applications of ultrasound.	3
14	Relative density of gold is 19.5. The density of water is 1000 kg/m^{-3}. Find the density of gold in Sl unit and in g/cc.	3
15	When do we say that work is done? Name the three types of work done.	3
16	Ravi lives in a village and his school is 5 km away from his house. His father suggested him to buy a scooty to go to school but Ravi opted for a bicycle. (i) What kind of energy transformation takes place while Ravi rides a bicycle ? (ii) What do you conclude about Ravi's nature ? (iii) Suggest one way in which you can contribute to the environment.	3
17	Study the table given below and answer the questions that follow : (a) Write the mass numbers of particles M, N, O and P. (b) Write the atomic number of particle N & P.	5
18	List five characteristic features of Vertebrates.	5
19	AIDS is a syndrome which damages body's immune system. (a) Name the causative agent of the disease. (b) List four ways through which the AIDS pathogen enters the body of a healthy person.	5
20	(a) Name the physical quantity described by (i) maximum displacement of a particle from its mean position. (ii) distance between two consecutive crests.	5

Particle	Electrons	Protons	Neutrons
M	2	3	4
N	10	9	10
O	8	8	8
P	8	8	10

	(b) Identify the characteristics of sound which depend respectively on amplitude and frequency. (c) What is meant by the statement "300 Hz frequency?" (d) Establish the relation between velocity of sound, wavelength and time period.	
21	a) Define kinetic energy and potential energy. b) Illustrate the energy changes which occur when a stone of mass '*m*' is dropped freely from a height '*h*'. c) Find the energy of a body of mass 35kg moving with a velocity of 15m/s.	5
	SECTION – B (OTBA) **(* Please ensure that open text of the given theme is supplied with this question paper.)** **Theme: Solid Waste Management**	
22	**State any four benefits of waste management.**	2
23	**Suggest some amendments in the present rules which would help in better management of solid waste.**	3
24	**Mention any five steps by which you can sensitize learners for waste disposal.**	5
	SECTION - C	
25	In an experiment to verify the laws of reflection of sound, if the angle between one tube and normal is θ, the perfect reflection takes place only when : (a) the angle between the two tubes is 90°. (b) the angle between the two tubes is 2θ. (c) the angle is anywhere between θ and 90°. (d) the angle between both the tubes is 0°.	1
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	1
27	Speed of the pulse in a slinky is independent of the : (a) length of slinky (b) material of slinky (c) area of coil of slinky (d) both (a) and (b)	1
28	Which one of the following statement is incorrect with respect to algae ? (a) All algae are microscopic (b) Algae are thallophytes (c) Three groups of algae are blue-green algae, brown algae and red algae (d) Algae manufacture food	1

29	If in a chemical reaction one of the products is a gas, then to verify the law of conservation of mass reaction, the reaction will be carried out in an / a : (a) open container (b) closed container (c) under water (d) empty room	1
30	Given below is a chemical equation to show the formation of calcium chloride by burning calcium in chlorine gas:- $Ca_{(s)}+Cl_{2(g)} \longrightarrow CaCl_{2(s)}$ Calculate the mass in g of calcium chloride formed when 20g of calcium combines with 35.5g of chlorine gas. (a) 70.0g (b) 15.5g (c) 55.5g (d) 17.5g	1
31	Observe the diagram below and identify it. It is :  (a) tap root system of monocotyledonous plant (b) fibrous root system of monocotyledonous plant (c) tap root system of dicotyledonous plant (d) fibrous root system of dicotyledonous plant	1
32	Ikshita needs to identify monocotyledonous plant on the basis of leaf shape. Identify the correct observation : (a) Broad leaf (b) Long leaf (c) Narrow leaf (d) Cut edged leaf	1
33	The different stages in the life cycle of a mosquito are shown in the diagram given below. 	1

		B, C and D in the diagram are : (a) eggs, pupa, larva respectively. (b) eggs, larva and pupa respectively. (c) larva, pupa and eggs respectively. (d) pupa, larva and eggs respectively.	
	34	The relative density of mercury is 13.6. What does this statement means?	2
	35	An object weighs 9.8N in air and 9.0N when fully immersed in water. How much is the buoyant force on the object?	2
	36	A student noted down the weight of an object in air and tap water as 70 gm wt and 60 gm wt respectively. Are his observations correct ? Explain.	2