SUMMATIVE ASSESSMENT – II (MARCH-2014)

CLASS IX SCIENCE

Time allowed: 3 ½ hours **Maximum Marks: 100**

General Instructions:

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

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

(iii) There is no choice in any of the questions.

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

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

(vi) Question numbers **4** to **6** in **Section-A** are **two marks** questions. These are to be answered in about **30 words** each.

(vii) Question numbers 7 to **18** in **Section-A** are **three marks** questions. These are to be answered in about **50 words** each.

(viii) Question numbers **19** to **24** in **Section-A** are **five marks** questions. These are to be answered in about **70 words** each.

(ix) Question numbers **25** to **33** in **Section-B** 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 B are **two marks** questions based on practical skills. These are to be answered in about **30 words** each.

(xi) **Section C** is from **OTBA** and is of 10 marks consisting of two questions of 5 marks each. These are to be answered in about 70 words each.

SECTION A

1. What are poly atomic ions? Give an example. 1

2. Expand AIDS. 1

3. Name two forms of oxygen found in atmosphere. 1

5. Name the devices which convert (a) mechanical energy into electrical energy
(b) chemical energy into electrical energy (c) electrical energy into light energy.
(d) Solar energy into electrical energy. 2

6. An echo is returned in 2s. What is the distance of the obstacle of the source, given that the speed of sound is 440 m/s? 2

7. (a) Calculate the number of molecules present in 9 g of water (H_2O)
(Atomic mass of Hydrogen = 1u, and oxygen = 16 u)
(b) What is meant by the term chemical formula? 2+1

8. a) Define atomicity.
b) Write the chemical formulae of Barium chloride and Aluminium sulphate 1+2

9. State the six postulates of Dalton's atomic theory. 3

10. What are acute and chronic diseases? Which one the two is more harmful and why? Give an example to support your answer. 3

11. a) How do antibiotics like penicillin act on bacteria?
b) Why is it difficult to prepare antiviral medicines than antibiotics? 1+2

12. (a) What is force of buoyancy?
(b) A metallic sphere of radius 2cm is completely dipped in water. Find the force of buoyancy on it. 1+2

13. Give conditions for positive work, no work and negative work in physics. Explain with the help of diagrams and equations. Give one example of each.
1+1+1

each in kWh. How much energy is this in joules? 3

15. (a) What is the audible range of hearing of the average human ear.

(b) What are infrasound and ultrasound? Give one example of each. 1+2

16. Distinguish between sound wave and light wave. 3

17. (i) What is the role of atmosphere in climate control?

(ii)Name the compound that depletes Ozone layer. 3

18. Trees are very important for us. They balance carbon dioxide and oxygen in nature, Regulate rainfall, provide us fuel and shelter to many animals. But due to increasing population, a lot of trees are axed for industries, housing and transport purposes.So the number of trees is fast decreasing. Answer the following questions based on the above information:

a) How can you help in increasing the number of trees at school level?

b) What can you do to spread awareness about importance and protection of trees?

c) What values are displayed by you? 3

19 .(i)Discuss in brief Rutherford's model of atom .

(ii) The following data represents the distribution of electrons, protons and neutrons in atoms of four elements A, B,C ,D

Element	protons	Neutrons	Electrons
A	20	20	20
B	18	22	18
C	6	8	6
D	6	6	6

Answer the following questions

(b) Which two elements form a pair of Isotopes?

(c) Write two important applications of isotopes. 3+2

20 .Identify the phylum or class of the following organism having following features:

a) Covering of feather and four chambered heart

b) Segmented body

c) Spiny skin

d) Bears pores

e) Slimy skin with three chambered heart 3+2

21.a) List two differences between gymnosperms and angiosperms

b) Name the group of plants which are called amphibians of the Plant Kingdom.

c) Name the kingdom in which you will place an organism which is single celled, eukaryotic and photosynthetic.

d) How are phanerogamae different from cryptogamae?

22.(a)Define Kinetic energy and give an example for it. Derive an expression for kinetic energy of an object of mass 'm' moving with a uniform velocity 'v'.

(b) Two identical pointed objects, one made from iron and another from wood, fall on sand from the same height. Which object has more potential energy? Justify. 5

23. (a) Define the terms wavelength, frequency, time period and amplitude of a sound wave?

(b) How are the wavelength and frequency of a sound related to its speed?

(c)Which wave property determines (i) loudness? (ii) Pitch?

24. (a)Draw a neat labelled sketch of carbon cycle in nature.

(b) What is global warming? What are its effects 3+2

SECTION B

25. In the experiment of verification of laws of reflection of sound, sound is directed along :

(A) Axis of the tube (B) Normal to the axis of tube

(C) Both (A) and (B) (D) Neither (A) nor (B)

26. A rectangular box is kept over a table with different faces touching the table. In different cases, the box exerts:

(a) Same thrust and same pressure
(b) Same thrust and different pressure
(c) Different thrust and same pressure
(d) Different thrust and different pressure

27. A pulse was created in a slinky of length 4m by a group of four students. They observed that it returned after reflection at the point of creation six times in 10 seconds and calculated the speed as follows:

Student	A	B	C	D
Speed in m/s	0.4	2.4	4.8	9.6

The correct speed was calculated by the student

(a) A (b) B (c) C (d) D

28. Which one of the following is a Pteridophyte?

a) Funeria b) Agaricus c) Dryopteris d) Pinus

29. Which law of chemical combination is shown by the reaction ?

Sodium chloride + Silver nitrate → Silver chloride + Sodium nitrate
5.85 g + 17g = 14.35 g + 8.5 g

(a) law of conservation of mass (b) Law of constant proportions .
(C) Avogadro's law (d) Law of multiple proportions

30. What Mass of Calcium Carbonate on heating willgive 4.4 g of carbon dioxide and 5.6 g of Calcium oxide, if the law of conservation of mass is true?

Calcium carbonate →Calcium oxide + Carbon dioxide

(a) 27 g (b) 17 g (c) 2 .9 g (d) 10 g

a) Maize **b) gram** **c)Pea** **d) Bean**

32. Which of the statement is correct for a dicot plant?

a) Reticulate venation, taproot, trimerous flower parts

b) parallel venation, fibrous roots and trimerous flower parts

c)Pentamerous flower parts, reticulate venation, taproot system

d) taproot system, parallel venation, trimerous flower parts.

33. Some developmental stages of living organisms are given below. The stage which is not a stage of mosquito life cycle is

a) Larva b) Pupa c)egg d) Cyst

34. A piece of copper of mass 106g is dipped in a measuring cylinder containing water at 70ml mark. The water rises to 82ml mark. Find (a) volume of copper piece (b) density of copper.

35. A student uses a spring balance of least count 10g wt and range 500 g wt. he records the weight of a small iron cube in air, in tap water and in salty water. If his three readings taken in this order are W_1, W_2 and W_3. Relate the three readings W_1, W_2 and W_3 using Archimedes' principle. 2

36. A student observed a specimen of cockroach and stated the following features. Write if the statement is true and correct if false.

a) It has four pairs of legs

b) It belongs to phylum Arthropoda, because it has segmented body

c) It is night active animal

d) It lacks exoskeleton 2

SECTION C (OTBA) 10 Marks

Theme-II (Environment and Development) **(5+5):**

a) The economic development of Uttarakhand region should be well balanced with its environmental concerns. State two actions each, which needs to be taken on the part of the individuals, social groups and the government to strike this balance.

b) A natural phenomenon may prove to be a horrific disaster because of irrational human actions and unscientific approach in the name of so called development. Briefly describe your views on this statement in reference to this recent tragedy happened in Uttarakhand.