Summative Assessment-1 2014-2015
Science
Class – IX

Time allowed: 3:00 hours   Maximum Marks: 90

General Instructions:

a)   The question paper comprises of two sections A and B. You are to attempt both the sections.

b)   All questions are compulsory.

c)   All questions of Section – A and Section – B are to be attempted separately.

d)   Q. No. 1 to 3 in Section A – 1 marks questions. These are to be answered in about one word or in one sentence.

e)   Q. No. 4 and 5 in Section A – 2 marks questions. These are to be answered in about 30 words each.

f)   Q. No. 6 to 16 in Section A – 3 marks questions. These are to be answered in about 50 words each.

g)   Q. No. 17 to 21 in Section A – 5 marks questions. These are to be answered in about 70 words each.

h)   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.

i)   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.

j)   Question number 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 the unit is used to measure the atomic radius? Convert this unit in metre.

2.   Find the number of electrons, protons and neutrons possessed by the alpha particles $\left({}_{2}^{4}He^{++} \right)$ used in the gold leaf experiment.

3.   Relate the given plant with its division in the scheme of classification.
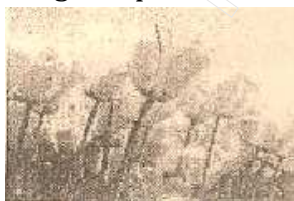
4.   If a ringing bicycle bell is held tightly by hand, why does it stop producing sound? What does it prove?

5.   An object of mass m when raised to a height h possesses potential energy of 200 J. find the new potential energy if the same object is raised to a height 3 h.

6. Write two points of difference between an atom and an ion. Explain by giving examples of two types of ions present in the compound composed of metals and non-metals.

7. Draw Bohr's model for an atom with
   a) Valency = 1
   b) Number of orbits = 3
   c) Mass number = 23
   Also identify the element. What conclusion can be drawn about the reactivity of the element?

8.
   a) When 10 g of sulphur is burnt in 10 g of oxygen 20 g of sulphur dioxide is produced? Find the mass of sulphur dioxide formed on burning 20 g of sulphur in 30 g of oxygen? Justify your answer by stating the law which governs your answer.
   b) Stae the postulate of Dalton's atomic theory which explains the above law.

9. Leech, Nereis, Prawn and scorpion – all have segmented body organization. Can they be placed in the same group? State yes/no giving reasons.

10. What precautions can you take in your school to reduce the incidence of infectious diseases?

11. Differentiate between acute and chronic diseases and classify the following diseases into these two groups: elephantiasis, dysentery, measles, tuberculosis.

12. Calculate the kinetic energy of a car of amss 500 kg moving with a velocity of 36 km/hr. Find the kinetic energy of the car becomes half.

13.
   a) State the SI units of Thrust and Pressure.
   b) In which situation we exert more pressure on ground, when we stand or when we lie down. Justify your answer.

14.
   a) Define reverberation? How can it be reduced?
   b) An echo returned in 4 s. What is the distance of the reflecting surface from the source given that speed of sound in air is 344 m/s.

15.
   a) Write the SI unit of density.
   b) What is the meaning of the statement, the relative density of gold is 19.3?

16. Ashish had a pain in his ear as he pricked it with a Pin. The doctor advised that we should take care of our ears and protect them from damage.
   a) Why we must not prick with hard and pointed things inside our ears?
   b) What is the function of ear drum in the ear?
   c) What values are depicted by the doctor?

17.
   a) You are given an element $^{14}_{7}X$. Find out.
      i.   Number of protons, electrons and neutrons in 'X'
      ii. Valency of 'X'
      iii. Electronic Configuration of 'X'

b) If bromine atom is available in the form of, say two isotopes $_{35}^{79}Br(49.7\%)$ and $_{35}^{81}Br(50.3\%)$. Calculate the average atomic mass of bromine atom.

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.

19. State four differences between infectious and non-infectious diseases giving one example of each.

20.
   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 20 m/s. what will be its potential energy at the end of 3 s? $\left(g = 10m/s^2 \right)$

21.
   a) Define buoyant force.
   b) Why buoyant force acts in direction perpendicular to the earth surfaces.
   c) Why does the silver wear metallic cover while going into the sea?

Section – B
(OTBA)

(*Please ensure that open text of the given theme is supplied with this question paper.)
Theme: Clean India – we mean it!

22. What is slurry? Name two main gases that are produced in a biogas plant.
23. Explain how sanitation can be linked into water resource management?
24. With reference to cleanliness, what in your opinion would be a true service to mankind?

Section – C

25. While performing an experiment to verify the laws of reflection of sound, the observed experimental difference between the values of angle of incidence and angle of reflection is likely to be minimum when a student choses a:
   a) Wide tube and a faint source of sound
   b) Narrow tube and a faint source of sound
   c) Narrow tube and a strong source of sound
   d) Wide tube and a strong source of sound.

26. A student is performing the experiment to compare the pressure exerted by different faces of the cuboid on the loose sand. His cuboid falls accidentally and there is a mild crack. The effect on the pressure will be:
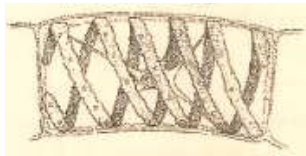

   a) It increases

   b) It decreases
   c) It remains same
   d) Data is insufficient

27. The name given to peak created in a transverse wave is:
   a) Crest
   b) Trough
   c) Amplitude
   d) Pitch

28. Ravi after observing the slide of spirogyra sketched it but labeled one part incorrect, that part can be:

   a) Cell wall
   b) Chloroplast
   c) Nucleus
   d) Rhizome

29. 5.3 g acetic acid combines with 6 g sodium carbonate to form 2.2 g sodium ethanoate, 0.9 g carbon di-oxide and some water. If the law of conservation of mass in a chemical reaction is true, then the mass of water produced will be:
   a) 8.20 g
   b) 8.02 g
   c) 8.0 g
   d) 0.8 g

30. In a chemical reaction between sodium and barium chloride, the colour of the precipitate of barium sulphate formed is:
   a) Pink
   b) White
   c) Orange
   d) Yellow

31. Choose the correct option that gives the best description of a dicotyledonous plant:
   a) Trimerous flower, parallel venation, tap root
   b) Pentamerous flower, reticulate venation, tap root
   c) Pentamerous flower, parallel venation, fibrous root
   d) Trimerous flower, reticulate venation, fibrous root

32. Parul, Apurva, Diya and Shruti were given a specimen of pea plant for recognizing the main characters of dicotyledonous plant. Each one wrote three characters in favour of answer. Who gave the right answer.

Name of Student	Root type	Flowers	Leaf Venation
Parul	Tap	Pentamerous	Reticulate
Apurva	Fibrous	Tetramerous	Parallel

| Diya
Shruti | Fibrous
Tap | Trimerous
Dimerous | Parallel
Reticulate |

a) Parul

b) Apurva

c) Diya

d) Shruti

33. The source of nutrition for larva of mosquito is:

a) Zooplanktons

b) Decaying plants

c) Human blood

d) Worms

34. In a set up used to determine the weight of a solid the material of the string used to hand the solid balance should be of which material and how the solid should be immersed in water?

35. Two objects A and B have densities 0.7 g/mL and 2.6 g/mL respectively. Both the objects are separately placed on the surface of a fluid of density 1.5 g/mL. What will be the direction of net force acting on the objects A and B and why?

36. Out of the following given names of the specimens which is known as "farmer's friend". Write its two adaptive features

Cockroach, Earthworm, Fish, Bird