OMGSGYW

SUMMATIVE ASSESSMENT – I, 2015-16
SCIENCE
Class – IX

Time Allowed : 3 hours   Maximum Marks : 90

General Instructions :

1. The question paper comprises of two Sections, A and B. You are to attempt both the sections.
2. All questions are compulsory
3. All questions of Section-A and all questions of 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 to 6 in Sections-A are two marks questions. These are to be answered in about 20 words each.
6. Question numbers 7 to 18 in Section-A are three marks questions. These are to be answered in about 50 words each
7. Question numbers 19 to 24 in Section-A are five marks questions. These are to be answered in about 70 words each.
8. 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
9. Question numbers 34 to 36 in Section-B are questions based on practical skills. Each question is of two marks.

Physics – 2, 3, 6, 12, 13, 14, 15, 16, 22, 23, 33, 35
Biology – 1, 5, 10, 11, 17, 18, 21, 24, 25, 26, 30, 31, 36
Chemistry – 4, 7, 8, 9, 19, 20, 27, 28, 29, 32, 34

SECTION-A

1. State the location of genes in the cell.   1

2. In the collision between two bodies a heavier and the other lighter, write the relation between the changes in momentum of the two bodies.   2

3. Write the SI unit of the universal gravitation constant (G).   1

4. In which of the following substances you expect strongest and in which weakest force of attraction between the particles : alcohol, water, sodium chloride, carbon dioxide. Give reason for your answer.   2

5. Name the muscular tissue which is present in the iris of the eye. What is the shape of these cells ?   2

6. A cyclist goes once round a circular track of diameter 105 metre in 5 minutes. Calculate his speed.   2

7. (a) Crystallisation is a better technique than simple evaporation technique. Justify this statement by giving two reasons.   3

   (b) Mention any two applications of chromatography.

8. "Solid carbon dioxide is called dry ice". Justify this statement.   3

9. (a) Show by an activity that homogeneous mixtures can have variable compositions."   3

   (b) How is it different from heterogeneous mixtures ?

10   Draw the diagram of smooth muscle cell and a sperm cell. Comment on the variety of shapes of cell by taking two more examples.   3

11   (a)   Name the tissue which joins :
            (1)   muscles to bones.
            (2)   bones to bones.
      (b)   Which of the two is :
            (1)   More elastic ?
            (2)   Stronger ?

12   What are the effects of the following on inertia of a body?   3
      (a)   If force is doubled
      (b)   If density is halved
      (c)   If volume is reduced to one thrid

13   Identify the force and explain how :   3
      (i)   it is responsible for holding the solar system together.
      (ii)   it is responsible for the earth revolving round the sun.

14   (a)   Differentiate between :   3
            (i)   Speed and Velocity
            (ii)   Displacement and distance
      (b)   Is it possible that a body to have its velocity and acceleration pointing in opposite directions ? Justify giving an example.

15   Define uniform speed and uniform acceleration.
      The train 'A' travelled a distance of 170 km in 3 hours whereas another train B travelled a distance of 180 km in 4 hours. Which train is travelling faster ?

16   A certain force exerted for 1.2 s raises the speed of an object from 1.8 m/s to 4.2 m/s. Find its acceleration. If mass of the object is 5.5 kg, calculate the force applied.   3

17   A farmer had a plot just beside the bank of a river. Each time his Kharif crop got damaged due to floods. He consulted the agricultural scientist who gave him a special variety of seeds and also advised him to practice fish farming.   3
      (i)   What was the specialty of seed grains given to him ?
      (ii)   What name can be given to this type of fish farming ?
      (iii) How the farmer was benefitted by the advice of agricultural scientist ?

18   How do Sunhemp or Guar help in crop production management ? How are these better than fertilisers ?   3

19   Three students A, B and C prepared mixtures using chalk powder, common salt and milk respectively in water. Whose mixture –   5
      (a)   would not leave residue on filter paper after filtration ?
      (b)   would show tyndall effect ?
      (c)   would give transparent / clear solution ?
      (d)   would settle down at the bottom when left undisturbed ?
      (e)   could be filtered by filter paper ?

20   (a)   Comment on the following statement :   5
            'Evaporation causes cooling'.
      (b)   Why do we observe water droplets outside the tumbler containing ice cold water ? Explain reason.

21   Write four characteristic feartures of Parenchymatic tissues. How would you classify this tissue based upon its specialised functions ? What are these functions ?   5

2 (a) State Newtons second Law of Motion. Express it mathematically and find SI unit of 5
force from it.

(b)
In the diagram given above, if the card is flicked away with a jerk, what will you
observe ? Explain the reason for this observation.

23 (a) Draw a velocity-time graph for an object in uniform motion. Show that the slope of 5
the velocity-time graph gives the acceleration of the object.

(b) An aeroplane starts from rest with an acceleration of $3\ ms^{-2}$ and takes a run for 35 s
before taking off. What is the minimum length of the runway and with what velocity the
plane took off ?

24 Define 'Hybridisation'. Explain the three types of cross-breeding practiced during 5
hybridisation ? What do you mean by genetically modified crops ?

SECTION - B

25 Three students brought samples of arhar dal from their homes to test the presence of metanil 1
yellow as adulterant. They took the samples in test tubes and added water to each. The
science teacher added a few drops of a chemical in each sample and observed that one of the
samples turned magenta. The chemical that the teacher added was :
(a) metanil yellow   (b) conc. hydrochloric acid
(c) iodine solution   (d) starch solution

26 Yellow brown is the colour of a reagent named :   1
(a) dil HCl   (b) satranin
(c) Iodine solution.   (d) dil sodium hydroxide

27 For the formation of iron sulphide from iron filings, the components taken are :   1
(a) iron filings and sulphur trioxide
(b) sulphur and iron filings
(c) carbon disulphide and iron filings
(d) sulphur dioxide and iron filings

28 Sulphur powder dissolves in carbon disulphide to form yellow coloured solution but solid 1
sulphur reappears by :
(a) evaporation of carbon disulphide
(b) sublimation of sulphur
(c) cooling the solution
(d) distillation

29 On heating crystal of copper sulphate in a test tube it is observed that :   1
(a) the substance sublimes.
(b) brown fumes are evolved.
(c) a grey mass is formed.
(d) white residue is left behind.

30   Anoop tabulated his observations about the cheek cells and onion cells as given below :   1

Sl. No.	Cheek cell	Onion cell
(i) Stain	Pink	Blue
(ii) Nucleus	Present	Present
(iii) Vacuole	Centrally located	Few, scattered
(iv) Cell wall	Absent	Present

and showed it to his teacher. Two of his observations were wrong. Which ones are they ?

(a)   (i), (ii)   (b)   (i), (iii)

(c)   (ii), (iv)   (d)   (iii), (iv)

31   A student observed that a neuron consists of a cell body with a nucleus and cytoplasm from   1
which long thin hair like parts arise. These hair like extensions are called :

(a)   cyton   (b)   axon

(c)   dendrites   (d)   nerve endings

32   Sublimation is used to separate which of the following mixtures :   1

(a)   Iron filing and sand

(b)   NaCl and sand

(c) NH_4Cl and salt

(d)   Urea and Nitrogen

33   The spring balance used to measure minimum force required to just move a wooden block   1
of range 0 – 100 gwt and has 100 divisions on its scale. When the block just started moving the
pointer was at 55th division the force at this point is :

(a)   50 gwt   (c)   55 gwt

(b)   6.5 gwt   (d)   5 gwt

34   Summer time is the time for soft drinks. We love to take lemonade, squashes, cold drinks, and panna   2
etc. Make a list of drinks you have and classify them as true solution suspension and colloids.

35   Graph for change of ice to steam is shown below. Observe the change of state from ice to   2
water and water to steam and write two differences that can be drawn from this graph about
these change of state.

Time (S)
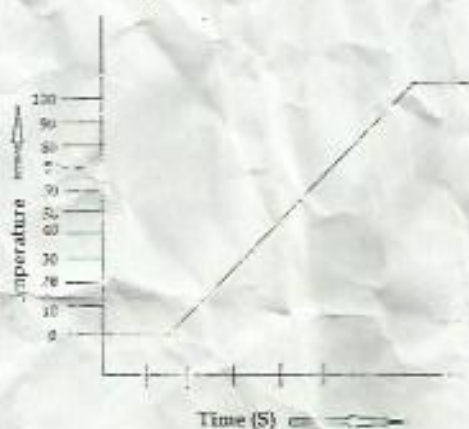
36   5g of raisins were placed in distilled water for 24 hours. The mass of soaked raisins was found   2
to be 7g. Calculate the percentage of water absorbed by raisins. Write one precaution that
needs to be taken in this experiment.