

## Sample Paper

(2020-21)

## Class 10

**Unicus Science Olympiad** 



Section – Class*  *Syllabus covered	Total Questions	Marks per Questions	Total Questions
Classic Section – Class 9	28	1	28
Classic Section – Class 8	12	1	12
Scholar Section – Class 9	7	2	14
Scholar Section – Class 8	3	2	6
Grand Total	50		60

- 1. Read the following statement and choose the correct option:
  - **Statement 1:** When a body is thrown up, the acceleration due to gravity at the topmost point is zero.
  - **Statement 2:** The acceleration due to gravity is always directed downwards towards the centre of the earth for a freely falling body.
  - a) Statement 1 is correct but statement 2 is incorrect.
  - b) Statement 1 is incorrect but statement 2 is correct.
  - c) Both the statements are correct and statement 2 is the correct explanation of statement 1.
  - d) Both the statements are correct but statement 2 is not the correct explanation of statement 1.

Correct Answer: b 1 Mark

2. Three students made the following statements:

Arun: Hydrophytes float on the water surface due to the presence of aerenchyma.

Krish: Apical meristematic tissue is responsible for growth in length.

Suman: Trunk of tree increase in girth due to cell division in meristematic tissue.

Who among them is/are correct?

a) Only Suman

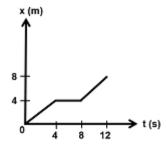
b) Only Krish

c) Only Suman

d) Arun, Krish and Suman

Correct Answer: d 1 Mark

3. Figure shows the position-time graph of a particles of mass 10 kg. Calculate the force acting on the particle for 0 < t < 4 s and 8 s < t < 12 s:



a) For 0 < t < 4 s, F = 5 N and for 8 s < t < 12 s, F = 5 N

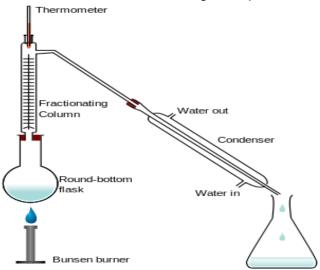
b) For 0 < t < 4 s, F = 6 N and for 8 s < t < 12 s, F = 5 N

c) For 0 < t < 4 s, F = 0 N and for 8 s < t < 12 s, F = 0 N

d) For 0 < t < 4 s, F = 4 N and for 8 s < t < 12 s, F = 5 N

Correct Answer: c 1 Mark

4. Deepak performed the following experiment to separate a mixture of alcohol and water. He took the mixture of ethyl alcohol and water in a distillation flask provided with fractionating column. He then started heating the liquid till the mixture begin to boil.



Which of the following observation about the above experiment is/are correct

- a) More volatile liquid is condensed first and collected in the flask and less volatile liquid with high boiling point is collected in another flask.
- b) Less volatile liquid is condensed first and collected in the flask and more volatile liquid with high boiling point is collected in another flask.
- c) More volatile liquid is condensed first and collected in the flask and less volatile liquid with lower boiling point is collected in another flask
- d) Less volatile liquid is condensed first and collected in the flask and less volatile liquid with lower boiling point is collected in another flask

Correct Answer: a 1 Mark

- 5. Which of the following is/are incorrectly grouped?
  - 1. Virus Common cold, Chicken pox, Measles
  - 2. Protozoa Malaria, Kala-azar, Sleeping sickness
  - 3. Bacteria Elephantiasis, Typhoid, Cholera
  - a) Only 1

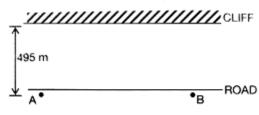
b) Only 2

c) Only 3

d) Both 2 and 3

Correct Answer: c 1 Mark

**6.** A road run parallel to a vertical cliff at a distance of 495 m as shown in the figure. A car standing at *A* blows a horn and the driver of the car hears the echo after 3 s. But a person standing at *B* hears the sound of horn twice within an interval of 2 s. Find the distance between the car and the person:



a) 412 m

b) 320 m

c) 240 m

d) 426 m

Correct Answer: a

1 Mark

- 7. Arrange the elements Zn, Sn, Ca and Al in the increasing order of their reactivity for replacing Cu from CuSO<sub>4</sub> solution:
  - a) Zn > Sn > Ca > Al

b) Ca > Al > Zn > Sn

c) Ca > Al > Sn > Zn

d) Ca > Sn > Zn > Al

**Correct Answer: b** 

1 Mark

8. Select the correct option and complete the following table:

Fibre	Type of fibre	Results of burning
Α	Natural	Burns slowly, no beads
Cotton	Natural	В
С	Synthetic	Burns with smoke, forms
		beads

- a) A Wool, B Burns completely, C Silk
- b) A Coir, B Burns with a sooty flame, C Polyester
- c) A Wool, B Burns completely, C Polyester
- d) A Silk, B Burns completely, C Nylon

Correct Answer: c

1 Mark

9. Arrange the following agricultural practices in the correct order:

## Sowing, Manuring, Irrigation, Harvesting, Ploughing, Levelling

- a) Ploughing, Sowing, Levelling, Harvesting, Manuring and Irrigation
- b) Ploughing, Levelling, Irrigation, Sowing, Manuring and Harvesting
- c) Ploughing, Irrigation, Sowing, Manuring, Harvesting and Levelling
- d) Ploughing, Levelling, Sowing, manuring, Irrigation and Harvesting

Correct Answer: d 2 Marks



Which of the following is/are the correct features of the phylum represented by the organisms shown above?

- 1. This phylum is the second largest phylum.
- 2. They respire with gills called ctendia or pulmonary sacs.
- 3. They have blue coloured blood due to the presence of blue pigment, hemocyanin.
- 4. Endoskeleton is formed of calcareous plates located in the dermis of body wall.

a) Only 1

b) Only 2

c) Both 2 and 4

d) 1, 2 and 3

Correct Answer: d 2 Marks