Science and Technology Questions and Solutions 2021

1. Water can dissolve more substances than any other liquid because.

(a) It is dipolar in nature.

(b) It is a good conductor of heat

(c) It has high value of specific heat

(d) It is an oxide of hydrogen

2. With reference to street lighting, how do sodium lamps differ from LED lamps?

1. Sodium lamps produce light at 360 degrees but it is not so in the case of LED lamps.

2. As street lights, sodium lamps have a longer life span than LED lamps.

3. The spectrum of visible light from sodium lamps is almost monochromatic while LED lamps offer

significant colour advantages in street lighting.

Select the correct answer using the code given below.

(a) 3 only

(b) 2 only

(c) 1 and 3 only

(d) 1, 2 and 3

3. The term "ACE2" is talked about in the context of

(a) genes introduced in the genetically modified plants

(b) development of India's own satellite navigation system

(c) radio collars for wildlife tracking

(d) spread of viral diseases

4. Bisphenol A (BPA), a cause of concern, is a structural/key component in the manufacture of which of

the following kinds of plastics?

(a) Low-density polyethylene

(b) Polycarbonate

(c) Polyethylene terephthalate

(d) Polyvinyl Chloride

5. "Triclosan" considered harmful when exposed to high levels for a long time, is most likely present in

which of the following?

(a) Food preservatives

(b) Fruit ripening substances

(c) reused plastic containers

(d) Toiletries

6. Which one of the following is a reason why astronomical distances are measured in light-years?

(a) Distance among stellar bodies do not change

(b) Gravity of stellar bodies does not change

(c) Light always travels in straight line

(d) Speed of light is always same

7. With reference to recent developments regarding 'Recombinant vector Vaccines', consider the

following statements:

1. Genetic engineering is applied in the development of these vaccines.

2. Bacteria and viruses are used as vectors.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

8. In the context of hereditary diseases, consider the following statements:

1. Passing on mitochondrial diseases from parent to child can be prevented by mitochondrial

replacement therapy either before or after in vitro fertilization of the egg.

2. A child inherits mitochondrial diseases entirely from the mother and not from the father.

Which of the statements given above is'/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

9. Bollgard I and Bollgard II technologies are mentioned in the context of

(a) Clonal propagation of crop plants

(b) Developing genetically modified crop plants

(c) Production of plant growth substances

(d) Production of biofertilizers

10. In a pressure cooker, the temperature at which the food is cooked depends mainly upon which of

the following?

1. Area of the hole in the lid

2. Temperature of the flame

3. Weight of the lid

Select the correct answer using the code given below.

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

11. Consider the following:

1. Bacteria

2. Fungi

3. Virus

Which of the above can be cultured in an artificial/ synthetic medium?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1,2 and 3

12. Consider the following statements:

1. Adenoviruses have single-stranded DNA genomes whereas retroviruses have double-stranded DNA

genomes.

2. Common cold is sometimes caused by an adenovirus whereas AIDS is caused by a retrovirus.

Which of the statements given above is/are correct?

(a) 1 only

(b) 2 only

(c) Both 1 and 2

(d) Neither 1 nor 2

13. Which one of the following is used in preparing a natural mosquito repellent?

a) Congress grass

b) Elephant grass

c) Lemon grass

d) Nut grass

UPSC Prelims Science & Technology Questions – Answer Key

1. A   8. A

2. A   9. B

3. D   10. C

4. B   11. A

5. D   12. B

6. D   13. C

7. C