

# N 396

Seat No.

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2020 III 18 1100 – N 396 – SCIENCE AND TECHNOLOGY (72) – PART II (E)

Time : 2 Hours

(Pages 9)

Max. Marks : 40

**Note :—** (i) All questions are compulsory.

(ii) Use of calculator is not allowed.

(iii) The numbers to the right of the questions indicate full marks.

(iv) In case of MCQs [Q. No. 1(A)] only the first attempt will be evaluated and will be given credit.

(v) For every MCQ, the correct alternative (A), (B), (C) or (D) with sub-question number is to be written as an answer.

For e.g. (i) (A), (ii) (B), (iii) (C).

(vi) Scientifically correct, labelled diagrams should be drawn wherever necessary.

1. (A) Choose the *correct* option and write its number for the following questions : 5

(i) Transfer of information from molecule of DNA to mRNA is called ..... process.

(A) Transcription

(B) Translation

(C) Translocation

(D) Mutation

P.T.O.



2/N 396

(ii) Body breaks up into several fragments and each fragment starts to live as a new individual. This is ..... type of reproduction.

- (A) Budding
- (B) Fragmentation
- (C) Regeneration
- (D) Binary fission

(iii) In complete combustion of fuels leads to formation of .....

- (A) Carbon monoxide
- (B) Carbon dioxide
- (C) Chlorofluorocarbon
- (D) Hydrogen sulphide

(iv) The spindle fibres start appearing from ..... stage of karyokinesis.

- (A) Prophase
- (B) Metaphase
- (C) Anaphase
- (D) Telophase



3/N 396

(v) Salts which can be used as supplement of calcium and iron are obtained from .....

(A) Carbonic acid

(B) Acetic acid

(C) Citric acid

(D) Gluconic acid

(B) Solve the following questions :

5

(i) Find odd one out :

Drying, Salting, Cooking, Soaking with sugar.

(ii) Write the correct co-relation :

Annelida : Earthworm :: Platyhelminthes : .....

(iii) State whether True/False :

Tobacco containing substances cannot cause cancer of mouth and lungs.

(iv) Write function of testes.

(v) I am connecting links between Reptilia and mammals. What is my name ?

P.T.O.

4/N 396

2. (A) Give Scientific reasons (any two) :

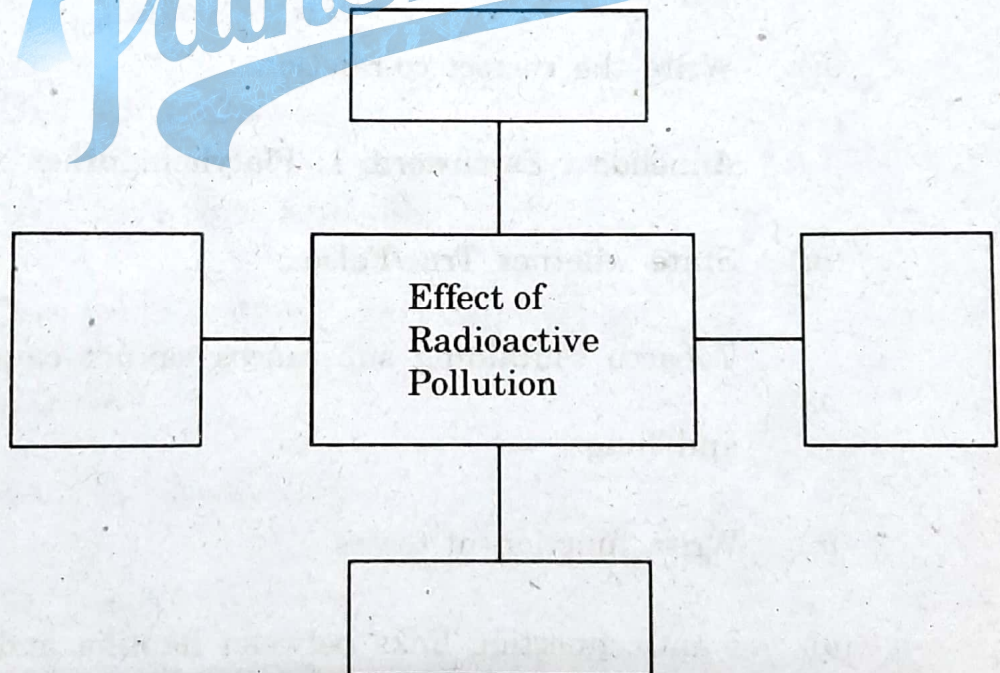
4

- (i) Indians should follow family planning for controlling the population.
- (ii) We feel exhausted after exercising.
- (iii) Hydroelectric energy, solar energy and wind energy are called renewable energies.

(B) Solve the following questions (any three) :

6

- (i) Complete the following chart :



- (ii) Distinguish between Aves and Mammalia.

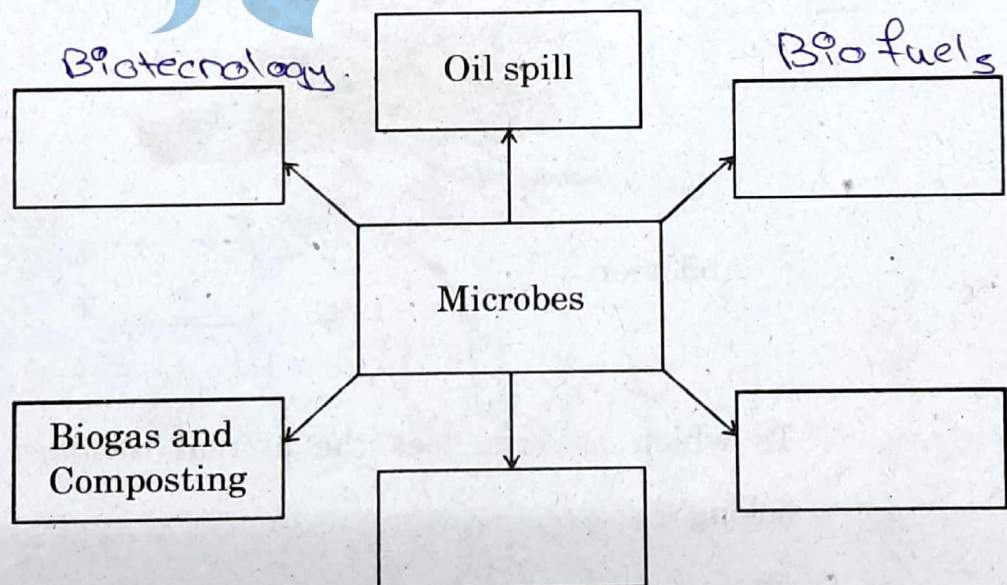


5/N 396

- (iii) By observing given picture, write any *two* effects of this disaster :



- (iv) Explain *four* ways to minimize stress.
- (v) Complete the following conceptual picture :



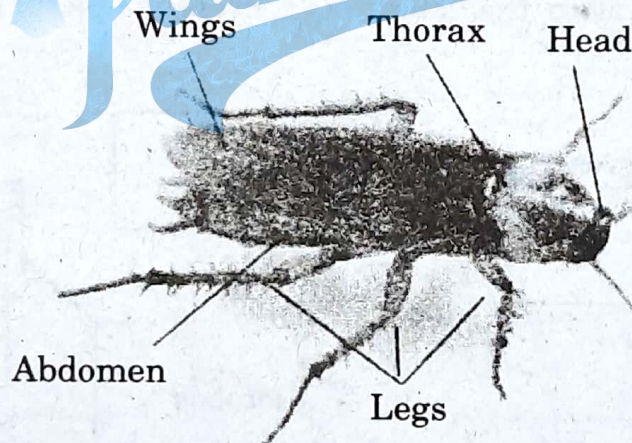
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3. Solve the following questions (any five) :

15

- (i) Explain the importance of Anatomical evidences with examples.
- (ii) What will you do ? Why ?
  - (a) Child of your neighbour is addicted to tobacco chewing.
  - (b) Your friend has developed the hobby of snapping selfies.
  - (c) Your sister has become incommunicative. She prefers to remain alone.
- (iii) Which precautions are necessary for proper decomposition of domestic waste ?
- (iv) Observe the following diagram. Write the answers of the following questions :



- (a) To which phylum does the animal included in the diagram belong ?
- (b) What is the exoskeleton made up ?
- (c) What is the symmetry ?



7/N 396

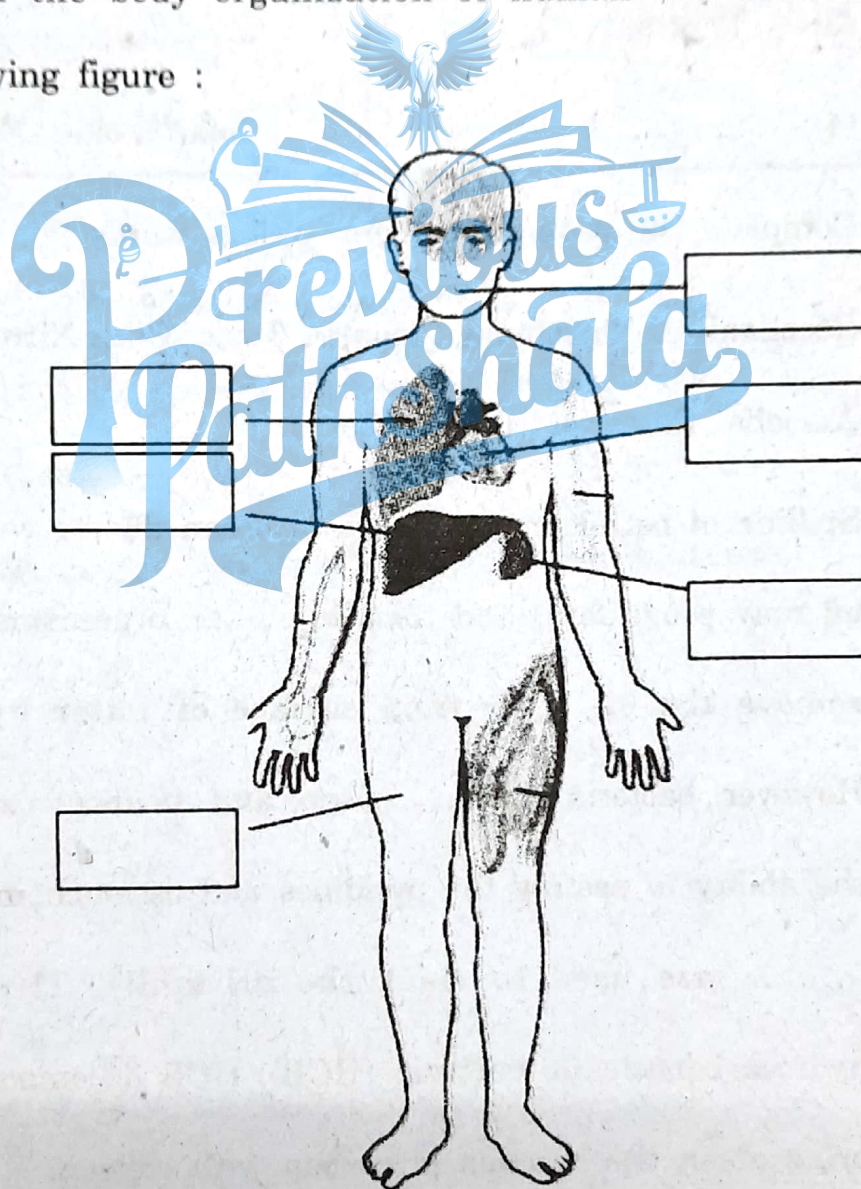
(v) Explain the following concepts in short :

(a) Surrogacy

(b) In Vitro Fertilization (IVF)

(c) Sperm Bank.

(vi) Label the body organization of human has been shown in the following figure :



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- (vii) Make a table based on forms of energy and corresponding devices :

Forms of Energy	Devices
(1) Electric	.....
(2) Mechanical	Sewing machine, Bicycle
(3) Thermal	.....
(4) .....	Solar cooker, Solar heater

- (viii) Complete the paragraph using proper words :

(Mechanical<sup>2</sup>, Rhizobium, Aquatic<sup>1</sup>, Toxic<sup>6</sup>, CO<sub>2</sub><sup>9</sup>, Nitrogen<sup>3</sup>, *Pseudomonas*, Amoeba<sup>4</sup>, Bacteria<sup>5</sup>, Hydrocarbons)

Spilling of petroleum oil occurs in ocean due to various reasons. This oil may prove fatal and toxic to ..... organisms. It is not easy to remove the oil layer from surface of water by ..... method. However, bacteria like ..... spp. and *Alcanovorax borkumensis* have the ability to destroy the pyridines and other chemicals. Hence, these ..... are used to clear the oil spills. These are called as hydrocarbonoclastic bacteria (HCB). HCB decompose the ..... and bring about the reaction of carbon with oxygen. .... and water is formed in this process.



4. Solve the following questions (any one) :

(i) Attempts at various levels are performed for conserving environment. Which role would you like to perform. Give *two* actions each :

- (a) Prevention
- (b) Control
- (c) Production
- (d) Awareness
- (e) Conservation

- (ii)
- (a) What is Biotechnology ?
  - (b) Give *one* use of Biotechnology.
  - (c) Give *one* commercial use of Biotechnology.
  - (d) Write *two* bacterial examples of biofertilizer.
  - (e) Write *two* names of crops genetically develop.