



# BOARD QUESTION PAPER: DECEMBER 2020

## Science and Technology Part - 2

Time: 2 Hours

Max. Marks: 40

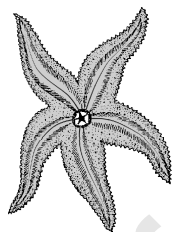
- Note:**
- All questions must be attempted.
  - Wherever necessary scientifically correct diagrams and correct labelling should be drawn.
  - Start every main question on a new page.
  - Numbers to the right indicate full marks.
  - For Question No.1(A) MCQ marks will be given only for the first attempt.
  - The answer to every MCQ should be written as shown:  
Example – Q. No. 1(A) (i) (b).

**Q.1. (A) Choose the *correct* alternative from the given options:** [5]

- Water reservoir possesses \_\_\_\_\_ energy.  
(A) Nuclear (B) Thermal  
(C) Kinetic (D) Potential
- In mitotic division, nuclear membrane completely disappear in \_\_\_\_\_ phase.  
(A) Telophase (B) Prophase  
(C) Metaphase (D) Anaphase
- Genetic changes occur due to \_\_\_\_\_ pollution.  
(A) Radioactive (B) Air (C) Water (D) Soil
- In human, sperm production occurs in the \_\_\_\_\_ organ.  
(A) Seminal vesicle (B) Testes  
(C) Prostate gland (D) Cowper's gland
- Which sanctuary of Assam is under threat due to dams and indiscriminate use of water?  
(A) Tadoba (B) Kaziranga (C) Manas (D) Sundarban

**(B) Answer the following sub-questions as per given instruction:** [5]

i.



Name the locomotory organ of animal shown in the above figure.

- Find the *correct* co-relation:  
Spirogyra: Fragmentation :: Planaria : \_\_\_\_\_.
- Write whether the following statement is True *or* False:  
DNA fingerprinting is mainly useful in Forensic Sciences.
- Write the molecular formula:  
4% acetic acid (Vinegar).
- Which molecules are necessary for the formation of plasma membrane?

**Q.2. (A) Give scientific reasons (any *two*):** [4]

- While performing the exercise, we feel tired.
- Hydroelectric energy, solar energy and wind energy are called renewable energies.
- Microbial enzymes are used instead of chemical catalysts in chemical industry.

**(B) Answer the following questions (any *three*):** [6]

- Distinguish between Aerobic respiration and Anaerobic respiration (any *two* points).
- Write a short note on Sacred groves.
- Explain the term:  
Modern technology of reproduction IVF.

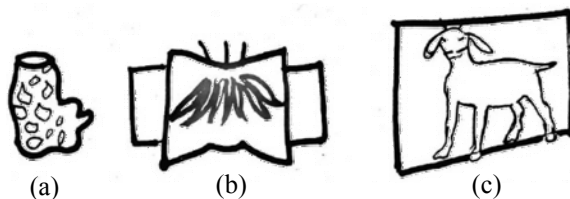


- iv. How is Balanoglossus connecting link between chordates and non-chordates?
- v. Explain Darwin's theory of natural selection.

**Q.3. Answer any five questions from the following.**

[15]

i.



Identify and explain the above different types of symmetry.

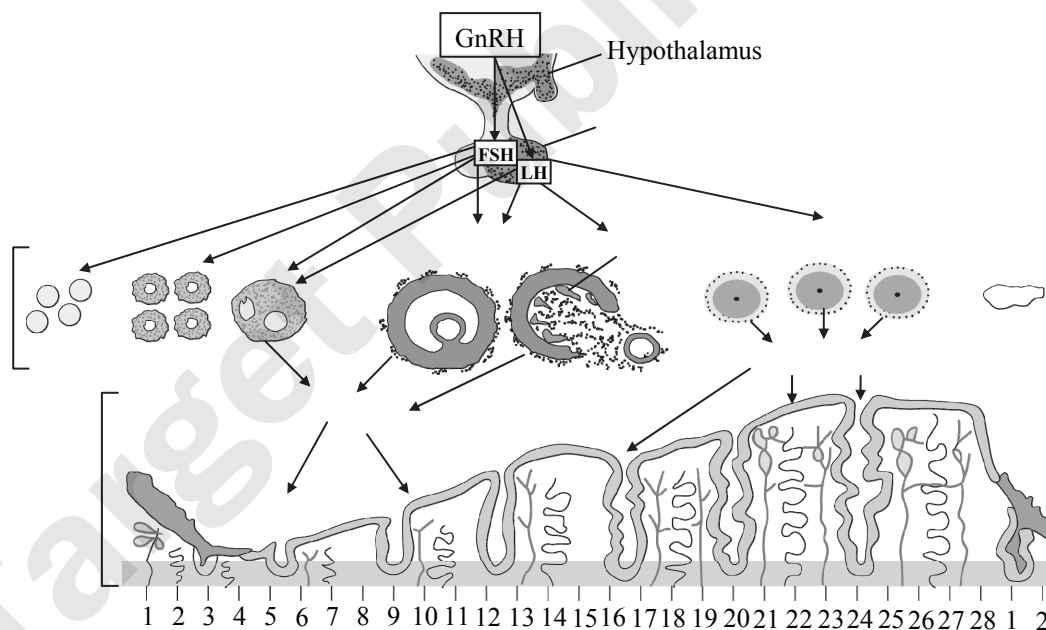
ii. Write any six factors affecting the social health.

iii. Complete the following chart:

	Substance obtained by microbial processing	Roles
(a)	Citric acid	_____
(b)	Ascorbic acid	_____
(c)	Beta carotene	_____
(d)	Glycolipids	_____
(e)	Vanillin	_____
(f)	Xylitol	_____

iv. Explain the three different levels of Biodiversity.

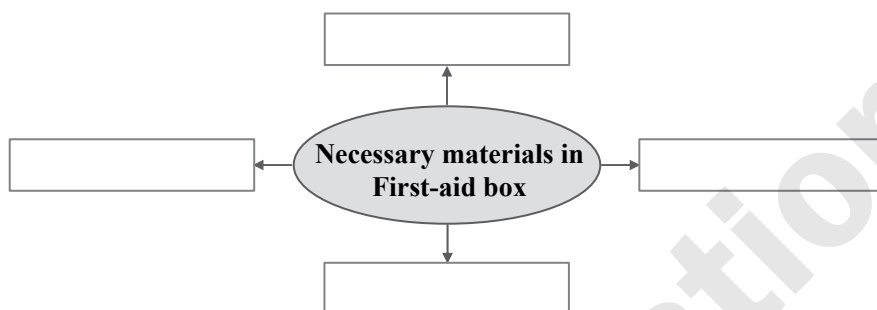
v. Observe the following figure and answer the questions:



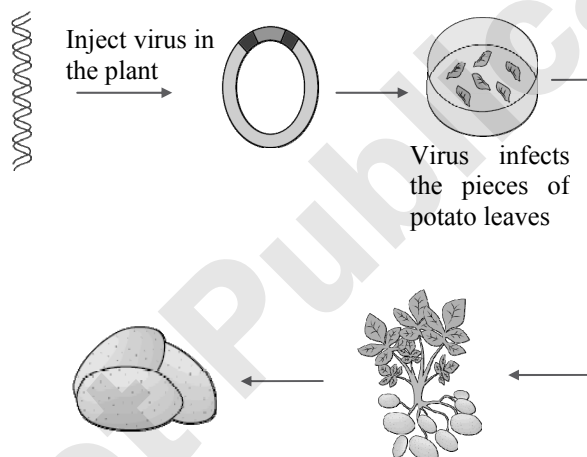
- a. Identify the process in above figure and after how many days it will repeat again?
- b. Write the names of hormones involved in this process.
- vi. What are the advantage of hydroelectric power generation?
- vii.
  - a. Define vestigial organs.
  - b. Write name of any two vestigial organs in human body.
  - c. Explain how one human vestigial organ is functional in another animal.
- viii. What will you do in the following cases and why?
  - a. Child of your neighbour is addicted to tobacco chewing.
  - b. You have to use free space around your home for good purpose.
  - c. Your friend has developed the hobby of snapping selfies.

**Q.4. Solve any one of the following:****[5]**

- i. a. What is meant by disaster management? **[1]**
- b. Classify the following activities into pre-disaster management and post-disaster management: **[2]**
- (i) Identifying the pro-disaster areas.
  - (ii) Quick establishment of help centre.
  - (iii) Participation of preferably local people saved from the disaster in arranging the help to victims.
  - (iv) Getting special training for disaster management.
- c. Complete the diagram: **[2]**



- ii. Observe the figure and answer the following questions:



- a. Identify the process given in the above figure. **[1]**
- b. Write the importance of above process. **[2]**
- c. Write any *two* benefits of Biotechnology. **[2]**