

# Newton's Academy

## Science Part 2

**Time: 2 Hours**

**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 subquestion number is to be written as an answer.  
For Eg.: (i) (A), (ii) (B), (iii) (C)
  - vi. Scientifically correct, labelled diagrams should be drawn wherever necessary.

- Q.1. (A) Write the correct alternative:** [5]
- i. Vestigial organ \_\_\_\_\_ present in human body is proof of evolution.  
(A) Human hand (B) Appendix  
(C) Ear muscles (D) Tail-bone

**Note:** \* Above question has three possible answers, [Option (B), (C) and (D)].

**Modified Question:**

- i. Vestigial organ \_\_\_\_\_ present in human body is proof of evolution.  
(A) Human hand (B) Appendix  
(C) Ear (D) Tail
- ii. Type of sexual reproduction is \_\_\_\_\_.  
(A) Fragmentation (B) Regeneration  
(C) Gamete formation (D) Budding

**Note:** \* Gamete formation is a process involved in sexual reproduction. It is not a type of sexual reproduction.

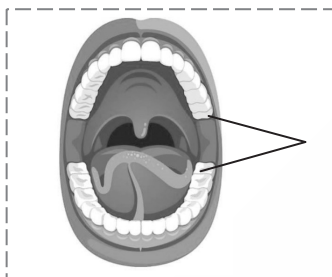
**Modified Question:**

- ii. \_\_\_\_\_ is not a type of asexual reproduction.  
(A) Fragmentation (B) Regeneration  
(C) Gamete formation (D) Budding
- iii. The apex consumer is \_\_\_\_\_.  
(A) Eagle (B) Frog  
(C) Snake (D) Grasshopper
- iv. The Hydroelectric capacity of Koyna dam is \_\_\_\_\_.  
(A) 2400 MW (B) 1960 MW  
(C) 1900 MW (D) 1961 MW
- v. Animal with bilateral symmetry is \_\_\_\_\_.  
(A) Star fish (B) Human  
(C) *Paramecium* (D) *Amoeba*

- (B) Answer the following questions as per the given instructions:** [5]
- i. State whether the following statement is true or false:  
To take selfie on road is the invitation for accident
  - ii. Write the correct co-relation:  
Insulin : diabetes : : Interferon : \_\_\_\_\_
  - iii. To which class does bat belong?
  - iv. Match the correct pair:

	Column 'A'		Column 'B'
(1)	Forest Conservation Act	(a)	1986
		(b)	1980
		(c)	1970

- v. Write the name of indicated part in diagram:  
Human jaw

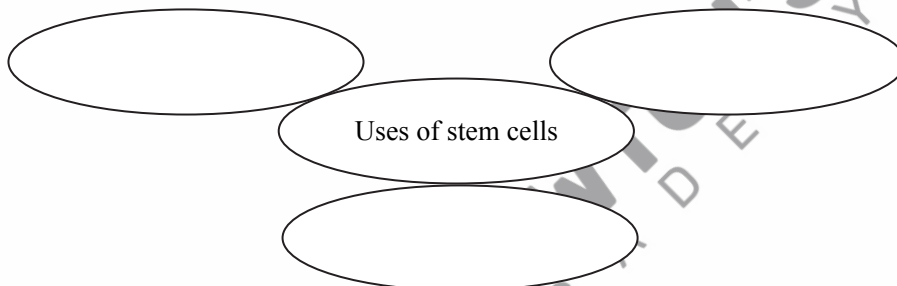


**Q.2. (A) Give scientific reasons (any two):** [4]

- i. Sometimes higher plants and animals too perform anaerobic respiration.
- ii. It is absolutely necessary to control the fission reaction in nuclear power plant.
- iii. Flower is structural unit of sexual reproduction in plants.

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

- i. Write a short note on Environmental Conservation.
- ii. Distinguish between Chordates and Non-chordates.
- iii. Write the correct answer in blank circles.



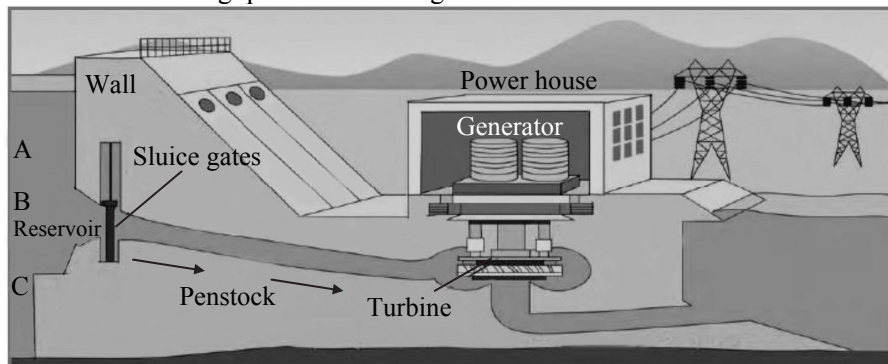
- iv. Write down any two objectives of disaster management.
- v. What are the benefits of mixing ethanol with petrol and diesel?

**Q.3. Answer the following questions (any five):** [15]

- i. Darwin's theory of natural selection.
- ii. Complete the following chart:

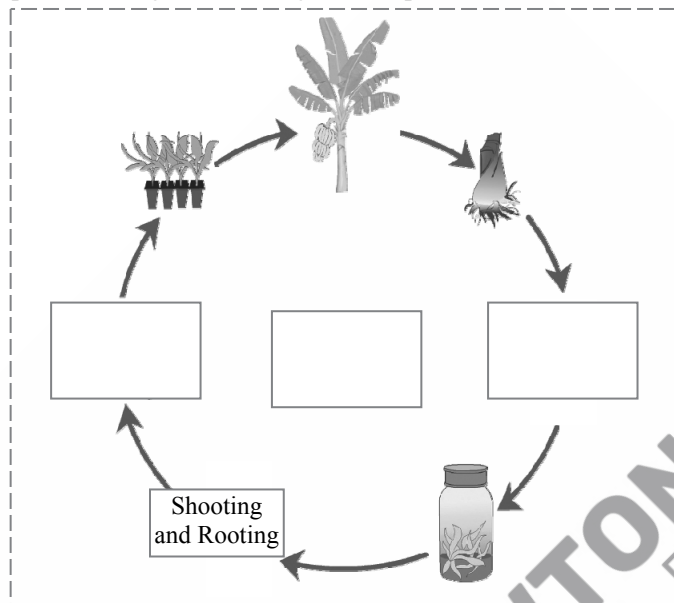
Sr. No.	Proteins	Name of the Organs
1.	Melanin, Keratin	_____
2.	_____	Pancreas
3.	Haemoglobin, antibodies	_____

- iii. Write the factors affecting environment.
- iv. Answer the following questions from figure:



- (a) With reference to point B, potential energy of how much water reservoir in the dam will be converted into kinetic energy?

- (b) What will be the effect on electricity generation, if the channel taking water to turbine starts at point A?
- (c) What will be the effect on electricity generation, if the channel taking water to turbine starts at point C?
- v. Cockroach, Frog, Sparrow, Star fish, from these animals which can regenerate its broken body part?
- vi. Complete the diagram showing various processes in tissue culture.



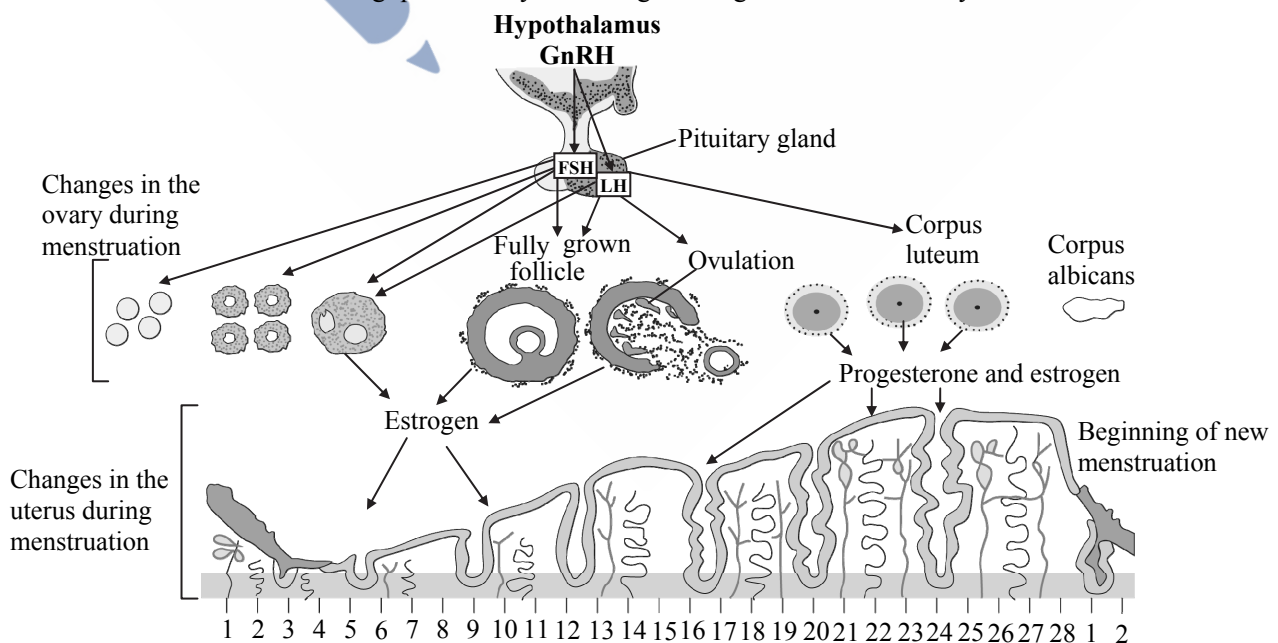
- vii. Which fuels are obtained from biomass?
- viii. Complete the following passage by using appropriate words given in brackets:  
(Delhi, 12, 2005, army, National Disaster, rescue work, State Reserve Police, 2015)

National Disaster Response Force has been established as per the Disaster Management Act, \_\_\_\_\_ Divisions of this force are working in army. Overall, \_\_\_\_\_ divisions are working in the country. Its headquarter is in \_\_\_\_\_ and it is in action all over the country with the help of \_\_\_\_\_. In Maharashtra, \_\_\_\_\_ Response Force is in action through State Reserve Police Force. Personnel of this force have substantial contribution in \_\_\_\_\_ in disasters like cyclones, cliff-sliding, building collapse, etc.

**Q.4. Answer any one of the following questions:**

[5]

- i. Answer the following questions by observing the diagram of menstrual cycle:



- (a) What is the period of menstruation?
- (b) On which day does ovulation occur during menstrual cycle?
- (c) In menstrual cycle which reproductive organs undergo changes?
- (d) Which period is said to be period of regeneration of endometrium ?
- (e) Which period is said to be period of secretions of glands in endometrium?

ii. Solve the following cross word:

1	A	D	D	I	C	T	I	O	N

- (1) Continuous consumption of alcoholic and tobacco materials.
- (2) This app may cause the cyber crimes.
- (3) A remedy to resolve stress.
- (4) Requirement for stress free life.
- (5) Various factors affect \_\_\_\_\_ health.
- (6) Art of preparing food items.