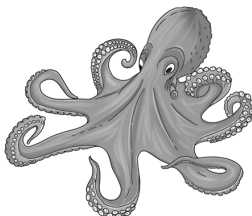


Q.1. (A) Choose the correct alternative and write correct option number as answer. [5]

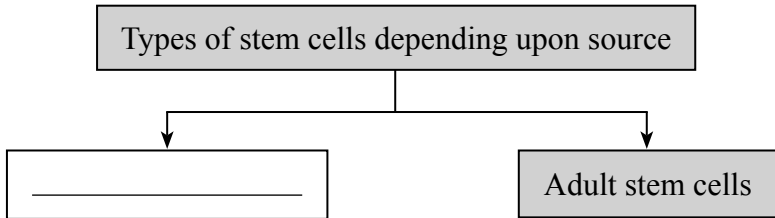
- (i) Genetic disorder like sickle cell anemia may be caused due to _____ .
- (a) mutation (b) translation
(c) translocation (d) transcription
- (ii) Protein like interleukin produced by biotechnology is used against _____ disease.
- (a) anemia (b) cancer
(c) diabetes (d) haemophilia
- (iii) We get _____ of energy from one gram of lipid.
- (a) 9 cal (b) 4 kcal (c) 4 cal (d) 9 kcal
- (iv) The _____ bacteria are useful for cleaning the hydrocarbons and oil pollutants from soil and water.
- (a) *Lactobacilli* (b) *Acidobacillus*
(c) *Pseudomonas* (d) *Streptococcus*
- (v) Human males have _____ numbers of chromosomes.
- (a) 44 + XX (b) 44 + XY
(c) 22 + XY (d) 22 + XX

(B) Answer the following. [5]

- (i) Pick the odd man out:
 β -carotene, lycopenes, xylitol, lutein
- (ii) Identify the phylum of the given animal:



(iii) Complete the given flowchart:



(iv) State, if True or False:

Communication media like mobile phone, television, internet should be used often.

(v) Write the co-relation:

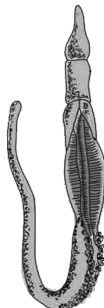
Ovary : Estrogen :: Testes : _____ .

Q.2. (A) Give scientific reasons. (Any two) [4]

- (i) Duck billed platypus is a connecting link.
- (ii) Biofuel is important among the renewable sources of energy.
- (iii) Humans have a crucial role in maintaining environmental balance.

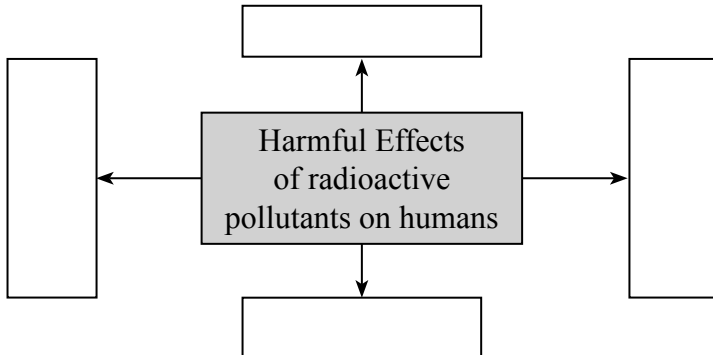
(B) Answer the following questions. (Any three) [6]

- (i) Draw a neat and labelled diagram of mitochondria and tri-carboxylic acid cycle.
- (ii) Write any two objections that were raised against Darwin's Theory of Natural Selection.
- (iii) Observe the given animal and answer the following questions:
 - (a) Identify the given animal and its phylum.
 - (b) Write any two characteristics of that phylum.



(iv) Write any two objectives of disaster management.

(v) Complete the given conceptual chart:



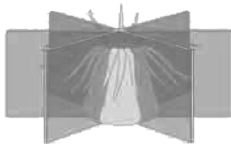
Q.3. Answer the following questions. (Any five)

[15]

(i) Observe the given figures and answer the following:



A



B



C

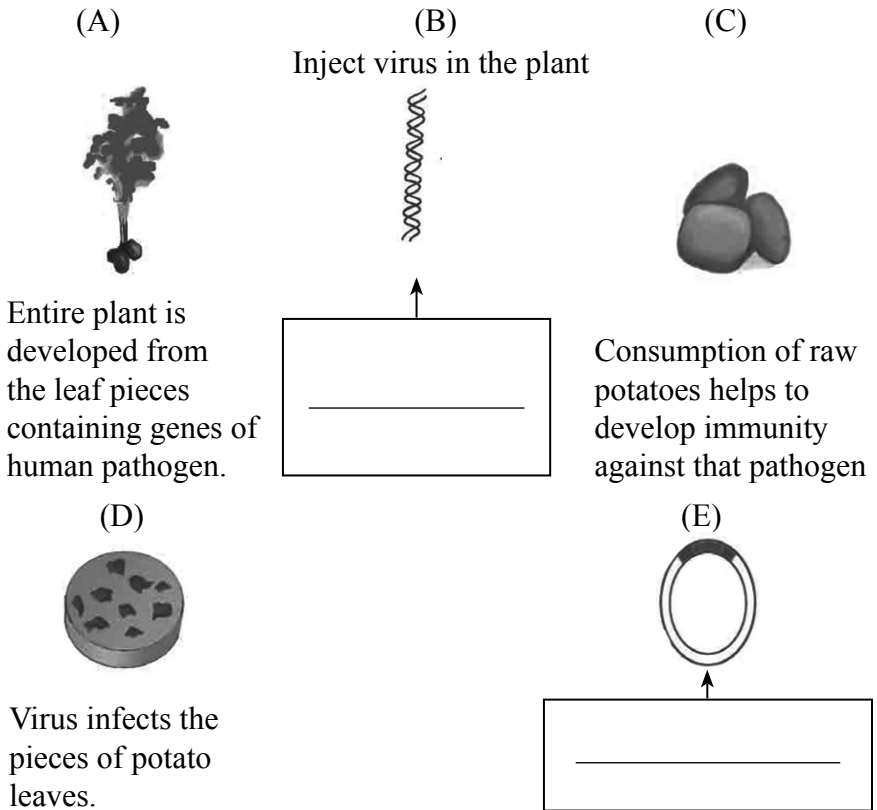
Identify the types of body symmetry and give *one* example of each apart from the given figure.

(ii) Write a short note on – The types of Biodiversity.

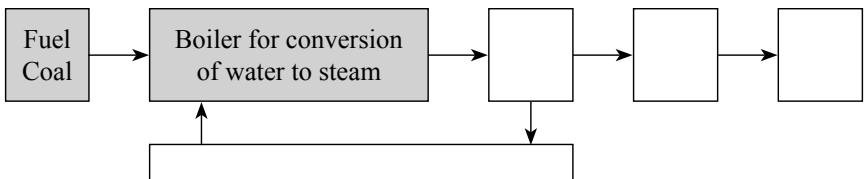
(iii) Complete the given chart:

Sr. No.	Body Constituents	Proteins/Amino Acids
1.	Blood	_____
2.	_____	Ossein
3.	Skin	_____
4.	_____	Insulin
5.	Muscle	_____
6.	_____	Various proteins of cell membrane

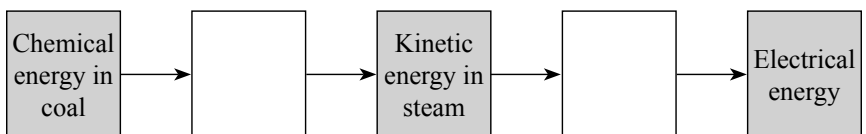
(iv) Rearrange and write proper alphabetical sequence only and complete the given blanks:



(v) (a) Complete the given flowchart for electrical energy production based on thermal power plant.



(b) Complete the flowchart for energy transformation in thermal power plant.

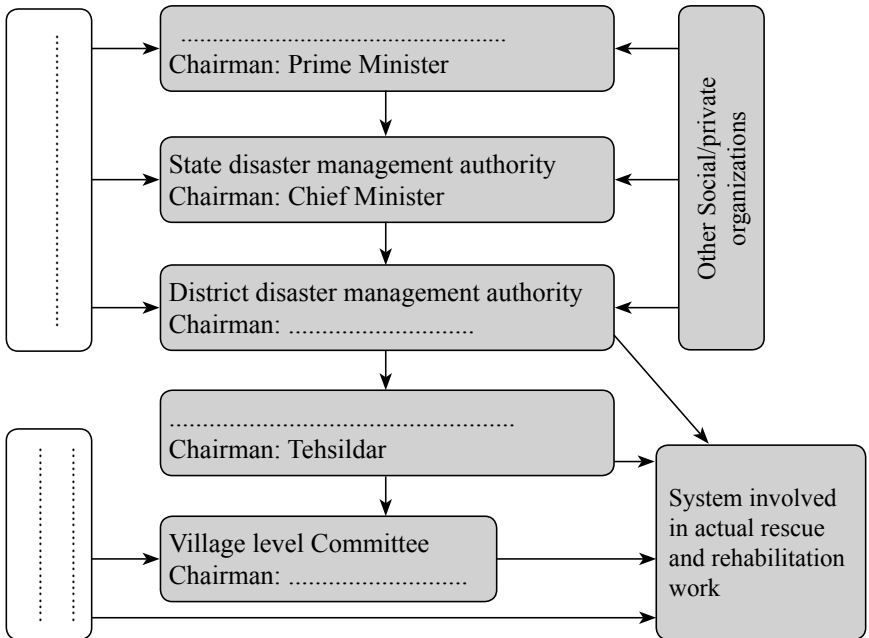


(vi) Complete the paragraph with the help of words given in the bracket:

(nutritive, ethanol, salt, actinomycetes, fermentation, carbon dioxide, lactic acid, *Saccharomyces cerevisiae*)

Different types of breads are produced from flour of cereals. Dough is formed by mixing of baker's yeast – _____, water, _____ and other necessary materials with flour. Due to _____ of carbohydrates by yeast, sugar is converted into _____ and _____. Dough rises up due to CO₂ and the bread becomes spongy. Bread and other products produced with the help of yeast become _____ .

(vii) Fill in the blanks in the structure of Disaster Management Authority.



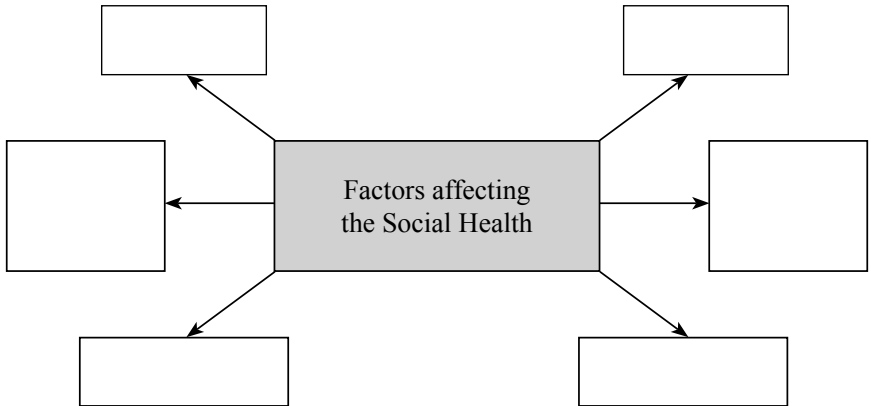
(viii)(a) Write any two advantages and two problems associated with hydroelectric power plant.

(b) Is hydroelectric power generation environment friendly? What is your opinion?

Q.4. Answer the following. (Any one)

[5]

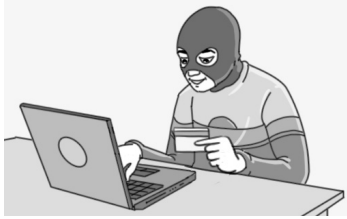
- (i) Answer the following questions in complete sentence based on female reproductive system:
- (a) How many immature oocytes are present at the time of birth in the ovary of female foetus?
 - (b) What is ovulation?
 - (c) What is menopause?
 - (d) Draw scientifically correct diagram of female reproductive system.
 - (e) Label the following parts:
 - (i) Ovary
 - (ii) Uterus
- (ii) (a) Complete the flowchart: **[3]**



- (b) Observe the following pictures and answer the following: **[2]**
- (i) Whether the incidence shown in the picture is rational or irrational? Justify your answer.



(ii) Identify the picture. What is the punishment given to the person shown in the picture?



★★★