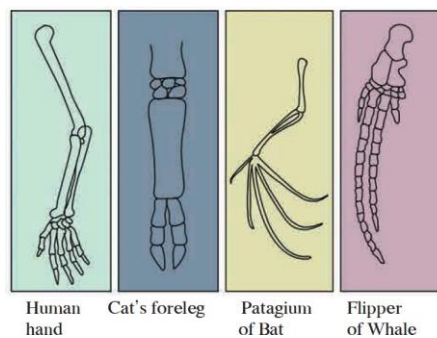


Q.3 Answer the following questions.

- 1) What is heredity ? explain the mechanism of hereditary changes.
- 2) What is carbon dating? Where is it used?
- 3) What are objections raised against Darwin's theory?
- 4) Observe the given images and answer the following questions.



- a) Which evolutionary evidence does it indicate?
 - b) What does it prove?
 - c) State another example of evolutionary evidence.
- 5) Define vestigial organs. Write names of some vestigial organs in the human body and write the names of those animals in whom the same organs are functioning.
 - 6) Define fossils. Explain the importance of fossils as a proof of evolution with an example.
 - 7) Explain Lamarck's Principle.
 - 8) Which evidence of evolution is shown in the given picture? Explain the importance of this evidence.



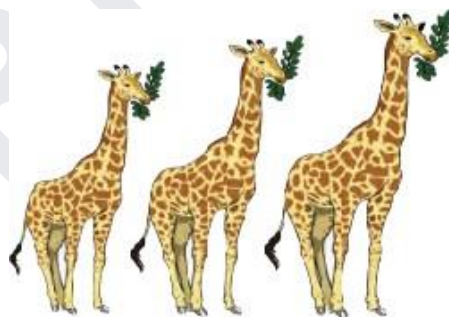
- 9) Explain in brief Darwin's theory of natural selection.
- 10) Complete the following paragraph with the words given in brackets.
(Cro-Magnon, brain, fire, agriculture, Cultural , homo-sapien, wise man)

Evolution of upright man continued in the direction of developing its _____ for the period of about 1 lakh years and meanwhile it discovered the _____. Brain of a 50 thousand year old man had been sufficiently evolved to the extent that it could be considered as a member of the class _____. Neanderthal man can be considered as the first example of _____. The _____ man evolved about 50 thousand years ago and afterwards, this evolution had been faster than the earlier. About 10 thousand years ago, a wise-man started to practise the _____. It started to rear the cattle-herds and established the cities. _____ development took place.

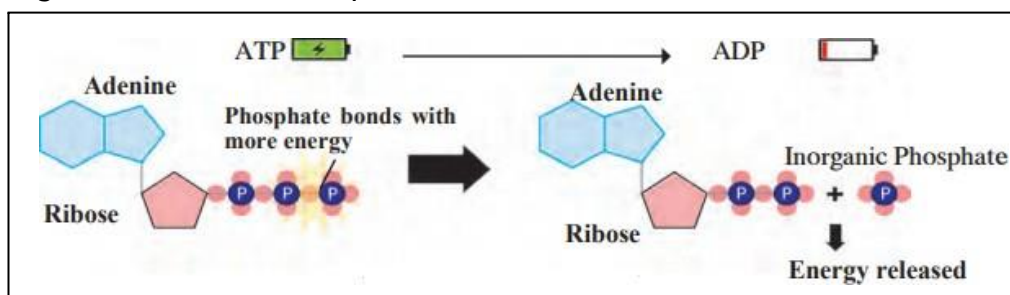
- 11) Observe the following images and answer the questions.



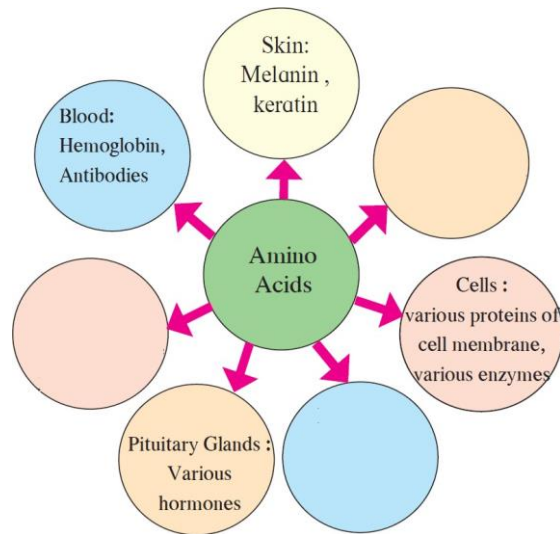
- Which evolutionary evidences are indicated in the given picture?
 - How are they formed?
 - Which method is used to measure their age or their time?
- 12) Observe the picture and answer the following questions.



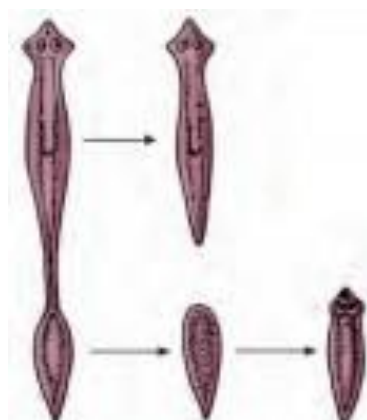
- The given picture indicates which principle?
 - Explain that principle in your language.
 - What is the meaning of acquired characteristics?
- 13) Identify the given reaction and explain it.



- 14) Explain the Steps of Glycolysis.
- 15) What are the main steps of Anaerobic respiration?
- 16) Which substances are formed after the digestion of amino acids and how are they utilised ?
- 17) Which hormones are formed from the fatty acids?
- 18) Why is water an essential nutrient?
- 19) Write the importance of fibres in our diet.
- 20) Complete the following concept map

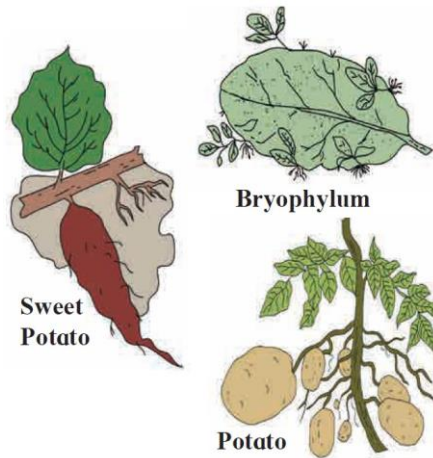


- 21) A married couple does not have children even after the necessary tests, so what are the solutions you would suggest?
- 22) Why is it necessary to maintain reproductive health ? Which precautions should one follow to maintain reproductive health?
- 23) Observe the given diagram and explain the method of reproduction.



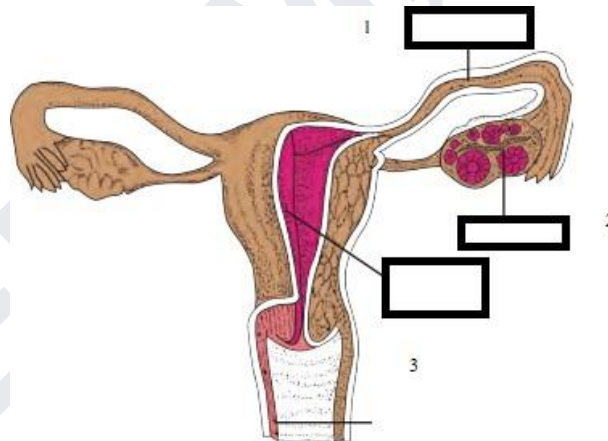
- 24) A piece of wet bread or *bhakri* kept in a humid place for 2–3 days, then
 - a) What will you observe ?
 - b) State the scientific name of the living organism and write its characteristics.

25) Observe the given picture and answer the questions given below.



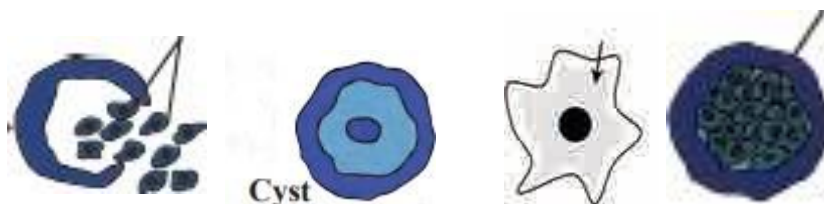
- a) State the type of reproduction.
- b) Identify the part of reproduction.
 Sweet potato -
 Bryophyllum -
 Potato -

26) Observe the diagram and answer the following questions.



- a) Label the indicated parts 1, 2 and 3 in the diagram.
- b) Where does the fertilisation of ovum occur ?
- c) Where does the embryo get implanted after fertilisation?

27) a) Which type of reproduction is indicated in the following diagram?
 b) Redraw the given type of reproduction in the correct sequence and explain it.



28) Complete the paragraph using the given words.

(Luteinizing hormone, endometrium of uterus, follicle stimulating hormone, oestrogen, progesterone, corpus luteum) Growth of follicles present in the ovary occurs under the effect of ----- This follicle secretes oestrogen. -- ---- - - - - - grows / regenerates under the effect of oestrogen. Under the effect of -----, fully grown up follicle bursts, ovulation occurs and -- ---- - - - is formed from the remaining part of the follicle. It secretes --- ---- - - - and ----- --. Under the effect of these hormones, glands of -- -- -- -- are activated and it becomes ready for implantation. What is the menstrual cycle? State the names of four hormones which control the menstrual cycle.

29) If newborns are produced at the age of menopause, they may be with some abnormalities. Why?

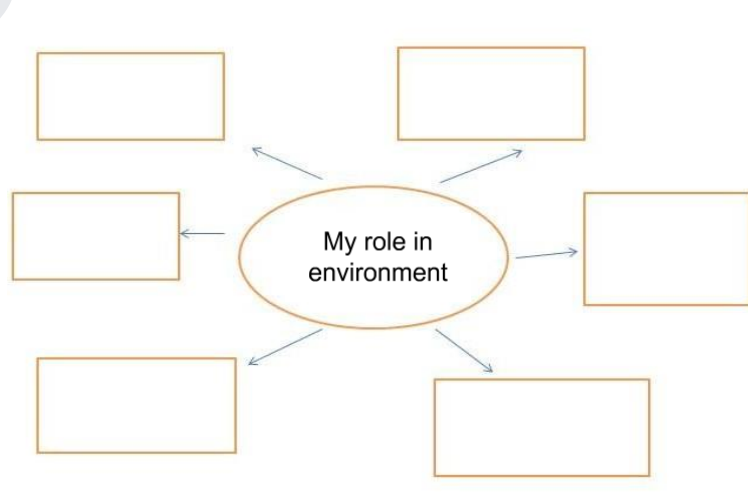
30) Complete the table.

Sex/Gender	Reasons for infertility
Female	
Male	

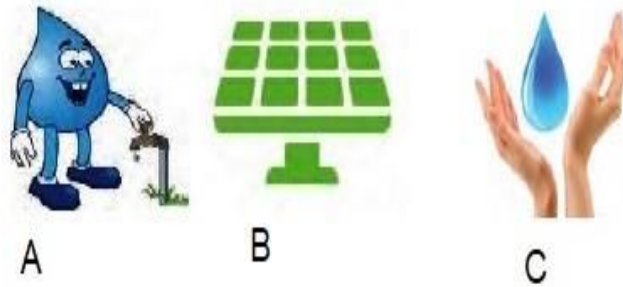
31) Explain the given concepts with the help of examples.

- a) Genetic Diversity b) Species Diversity c) Ecosystem Diversity

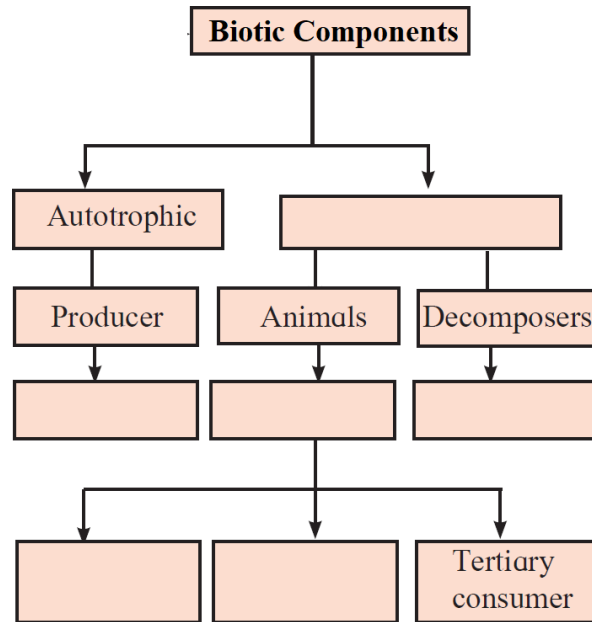
32) Complete the concept map.



33) What is the meaning of the following symbols ? Write your role accordingly.



34) Complete the concept map.



35) Why is it said that pollution control is important ?

36) a) Write the given food chain in appropriate sequence.

Grasshopper – Snake – Rice field – Eagle – Frogg

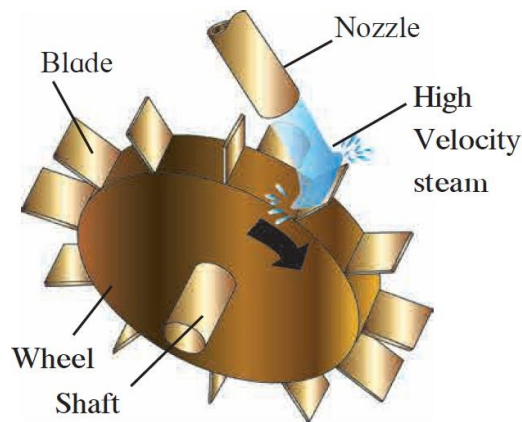
b) In which ecosystem a given food chain is included ? Explain the ecosystem.

c) If the frog population declines all of a sudden what will be the effect on paddy fields?

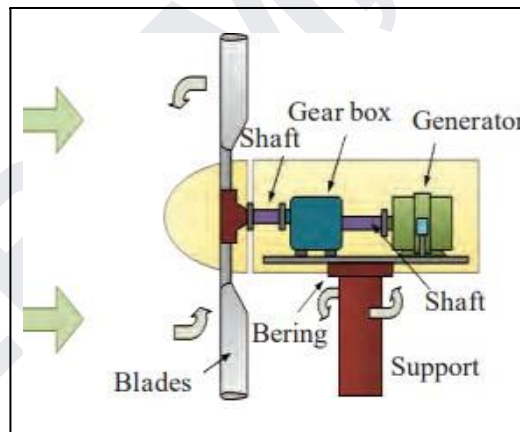
37) Complete the table.

Endangered Heritage Places of the Country	Threatened/ endangered species of an animal	Reasons
Western ghat		
	Rhino	
	Tiger	

- 38) Explain the classification of threatened species of animals with an example.
- 39) Observe the given diagram and answer the questions given below



- a) Explain the diagram.
- b) Answer the questions with the help of a diagram.
- c) What is the name of machine given in the diagram
- d) Write down the function of this machine in short.
- e) How does it gets/forms the motion
- 40) Observe the given diagram and answer the questions.

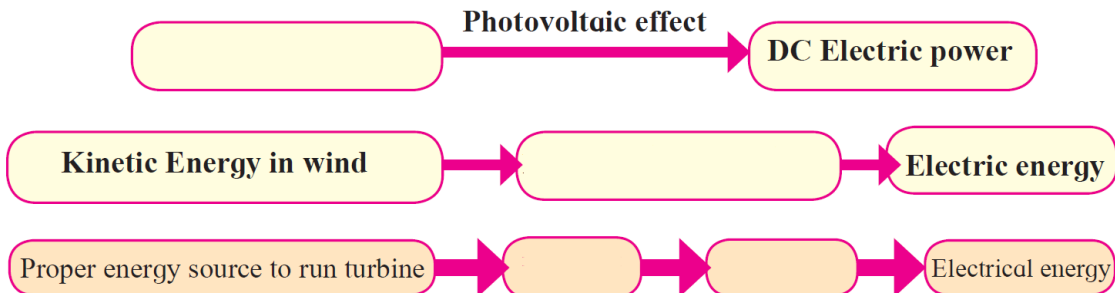


- a) Which type of energy is generated?
- b) This power station depends on which factors ?
- c) Is it environment friendly ?
- 41) Complete the table.

Advantages of hydroelectric power plant	Disadvantage of hydroelectric power plant

Limitations of solar energy	Limitations of wind energy

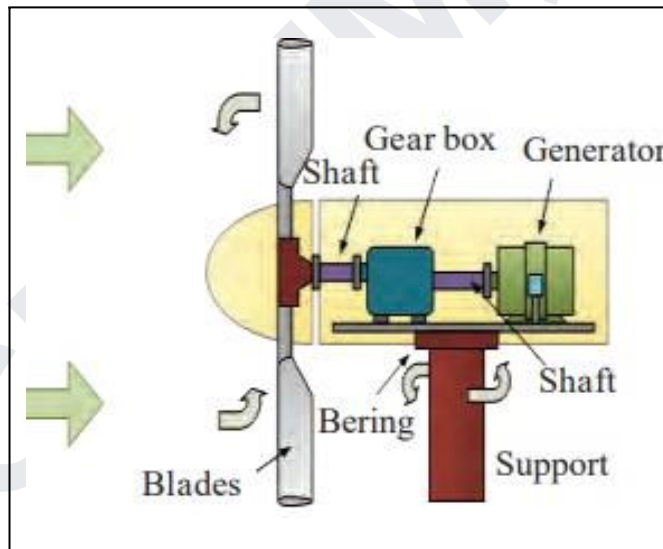
42) Complete the following flow charts.



43) Draw the flowcharts for the given power stations.

- a) Thermal energy based electric power plant
- b) Power generation plant on energy of natural gas

44) Explain the stages in electric generation from the given schematic diagram.



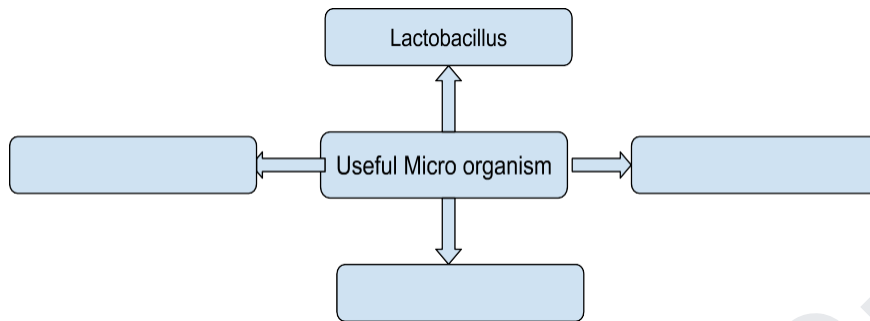
45) Draw the schematic diagram of natural gas power plants and answer the following questions.

- 46) Where is the power plant based on natural gas in Maharashtra ?
- 47) Why is there less pollution by natural gas power plants?
- 48) Give the example of eco-friendly electric power generation plants
- 49) What is the importance/ function of a solar reflector?
- 50) Why are absorbing/controlling rods used in atomic reactors?

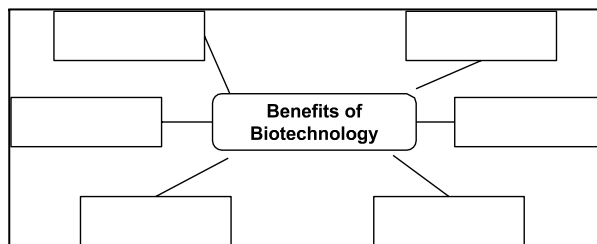
51) Complete the table.

Limitations of Solar energy	Limitation of wind energy

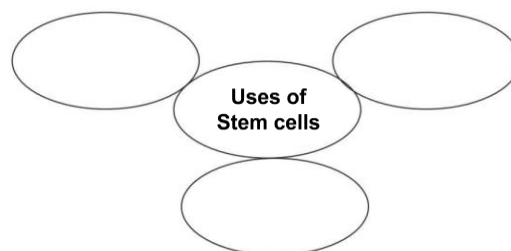
52) Complete the concept map.



- 53) In industries microbial enzymes are used over chemical enzymes.
- 54) How is soil pollution controlled by microbes ?
- 55) Why should we use bio insecticides ?
- 56) Explain - Importance of microbes in sewage (water) treatment in cities.
- 57) How are microbes useful in land filling for solid waste management?
- 58) Which fuels do we get from microbes ?
- 59) What is the importance of probiotics to humans ?
- 60) What is the use of antibiotics to humans & other animals ?
- 61) What are the benefits of microbial transplantation in plants?
- 62) Explain products made & their uses from microbes?
- 63) Complete the chart.



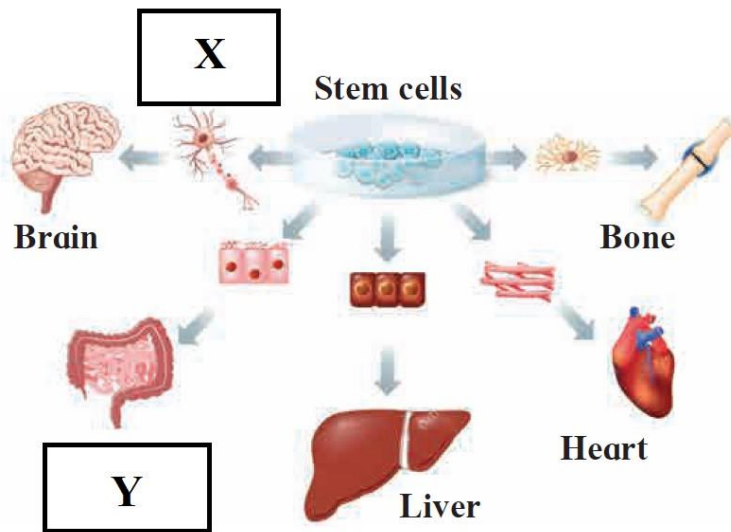
64) Write the correct answer in circles.



65) Write practical uses of biotechnology.

Sr. No.	Field	Uses
A	Crop Biotechnology	
B	Hybrid seeds	
C	GM Crops	

66) Observe the following figure and answer the questions.



- Which property of the stem cell is shown in figure?
- Write the name of the cells or organs denoted by X and Y.
- What is the benefit of tissue / organ culture from stem cells?

67) Complete the paragraph.

(red bone marrow, degenerated, umbilical cord, adipose, division, blastocyst)

Different tissues of the body are formed by _____ of stem cells. Stem cells are present in the _____ by which the foetus is joined to the uterus of the mother. Stem cells are also present in the _____ stage of embryonic development. Stem cells are present in _____ and _____ connective tissue of adult human beings. It has become possible to produce different types of tissues and the _____ part of any organ with the help of these stem cells.

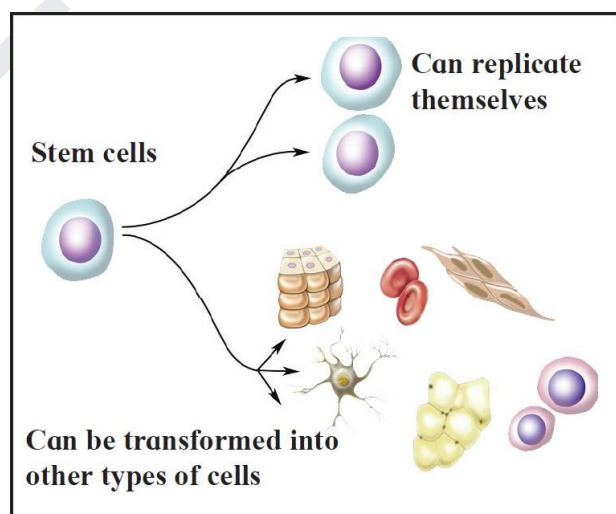
- What is meant by Biotechnology ? What does it include ?
- Explain the commercial applications of biotechnology with examples.
- How can we save the lives of many people by organ donations ?
- What are the uses of Biotechnology ?
- How is Biotechnology useful for human health ?
- What is meant by cloning ? Explain its types.

- 74) Write uses of DNA fingerprinting ?
- 75) How is Biotechnology useful in the development of agriculture ?
- 76) What precaution should be taken while using insecticides ?
- 77) Why are medicinal plants being cultivated nowadays?
- 78) How is Biotechnology used in food processing ?
- 79) What is meant by stem cells ? Write its types ?
- 80) Define genetically modified crops. Give two examples.
- 81) Give examples of bio-fertilizers mentioning their advantages.
- 82) What is meant by vaccination ? What is the safest method of vaccination ?
- 83) Why are vaccines made by biotechnology preferred ?
- 84) What is organic farming? Why is there an emphasis on organic farming nowadays?
- 85) What will happen if we eat transgenic potatoes ?
- 86) Write the things in day-to-day life made by biotechnology.
- 87) Fill in the blanks in the following paragraphs.

(environment related, decomposition, microbial techniques, organic matter, oxidised, aquatic life)

It has become possible to solve_____various problems with the help of biotechnology._____are already in use for treatment on sewage and solid waste. Sewage is rich in_____. If such sewage is released in natural water bodies like rivers, the organic matter in it gets_____with the help of dissolved oxygen. Due to this, the level of dissolved oxygen in water decreases, adversely affecting the_____.

- 88) Observe the given figure and answer the following questions.

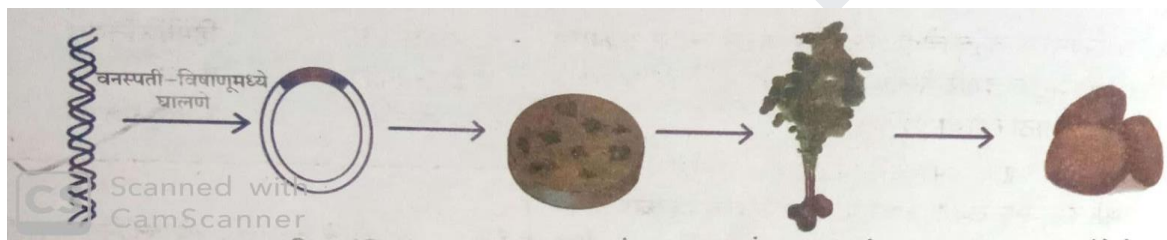


- a. What is shown in the figure?
- b. What can the stem cells make in this figure?
- c. What can these stem cells transform into?

- 89) Which proteins are made by genetics ?
- 90) Write the effect of biotechnology on agriculture & allied fields.
- 91) What is meant by the blue revolution ? Which products are produced by pisciculture?
- 92) What are the advantages of tissue culture ?
- 93) What is meant by edible vaccines?
- 94) Write down the benefits of plants grown through tissue culture.
- 95) Complete the following chart.

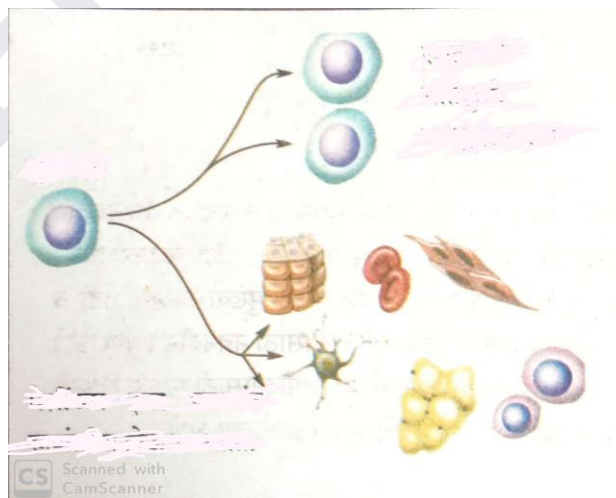
Sr. No.	Plants	Functions
1	Pteris vittata
2	Pseudomonas
3	To absorb uranium and arsenic.
4	To absorb the radiation from radioactive debris.
5	Indian mustard

- 96) a) What does the following figure relate to?



- b) Briefly describe each of these steps.

- 97) Identify the given figure and label it.



- 98) What will you do? Why?

- a) Your sister has become incommunicative. She prefers to remain alone.
- b) You are spending more time on internet/mobile games, phone, etc.
- c) You have to use free space around your home for a good purpose.

99) a) What mental disorder is shown in the given picture?



b) What social message would you give from this?

100) Complete the following.

(lungs, carcinogenic, nervous system, useful, deadly, addiction, intoxicating)

Children in their early age try upon tobacco, cigarette, gutkha, alcoholic drinks, drugs, etc. due to either peer-group pressure or symbol of high standard living or as an imitation of elders. However, it may lead to _____ to such _____ substances. Temporarily _____ drugs of plant origin and some chemicals may permanently damage the human _____, muscle system, heart, etc. Earlier, we have studied the _____ effect of tobacco containing substances on mouth and _____.