



BIOLOGY

BOOKS - NAVNEET PUBLICATION

CELL BIOLOGY AND BIOTECHNOLOGY

Example

1. What is cell?



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2. What is tissue? Which are the functions of tissue?



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3. Which technique in relation to tissues have you studied in earlier classes?



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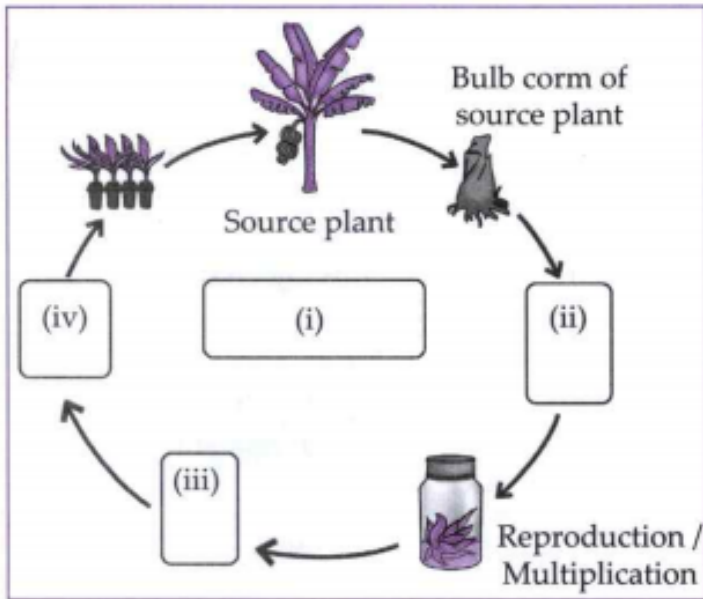
4. Which are the various processes in tissue culture?



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5. Assign names in the figure given below.
Explain the various stages those are kept

blank.



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6. What is biotechnology?



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7. In which various fields, biotechnology has been useful?



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8. What is the impact of biotechnology on agricultural and other related fields?



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Exercise

1. Methods like artificial insemination and embryo transplant are mainly used for _____.

A. animal husbandry

B. wild life

C. pet animals

D. for infertile women

Answer: A



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2. Choose the correct alternative and write its alphabet against the sub question number :

.....is the revolutionary event in biotechnology after cloning.

A. Human genome project

B. DNA discovery

C. stem cell research

D. all the above

Answer: C



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3. The disease related with the synthesis of insulin is __

- A. cancer
- B. arthritis
- C. cardiac problems
- D. diabetes

Answer: D



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4. Government of India has encouraged the _____ for improving the productivity by launching NKM - 16.

A. aquaculture

B. poultry

C. piggery

D. apiculture

Answer: A



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5. Choose the correct alternative and write its alphabet against the sub question number :

The property of stem cells is called.....

diversity

equality

differentiation

pluripotency

A. diversity

B. equality

C. differentiation

D. pluripotency

Answer: D



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6. Choose the correct alternative and write its alphabet against the sub question number :

Cell.....starts from 14th day of conception.

development

specialization

growth

differentiation

A. development

B. specialization

C. growth

D. differentiation

Answer: D



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7. Choose the correct alternative and write its alphabet against the sub question number :

Availability ofis an important requirement in organ transplantation.

A. doctor

B. clinic

C. donor

D. ambulance

Answer: C



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8. Choose the correct alternative and write its alphabet against the sub question number :

The toxin which is lethal forwas produced in leaves and bolls of BT cotton.

A. bollworm

B. locust

C. birds

D. frogs

Answer: A



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9. Choose the correct alternative and write its alphabet against the sub question number :

Transgenic raw potatoes generate the immunity against.....disease.

A. plague

B. cholera

C. leprosy

D. TB

Answer: B



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10. Changes in genes of the cells are brought about in non-genetic technique.



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11. Gene from *Bacillus thuringiensis* is introduced into soybean.



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12. Rewrite the following wrong statements after corrections:

High-class varieties of crops have been developed through the technique of transplantation.



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13. Rewrite the following wrong statements after corrections:

Earlier, insulin was being collected from the pancreas of pigs.



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14. Rewrite the following wrong statements after corrections:

Malaria arises due to genetic changes in hepatocytes.



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15. Rewrite the following wrong statements after corrections:

The E.coli bacteria are useful for cleaning the hydrocarbon and oil pollutants from soil and water.



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16. Rewrite the following wrong statements after corrections:

Various essential elements like N, P, K are removed and hence become unavailable to the crops due to earthworms and fungi.



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17. Rewrite the following wrong statements after corrections:

We do not have any tradition that cures the disease with the help of natural resources.



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18. Changes in genes of the cells are brought about in non-genetic technique.



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19. Write the following statements are True or false:

Gene from *Bacillus thuringiensis* is introduced into cotton.



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20. Write the following statements are True or false:

High class varieties of crops have been developed through the techniques of transplantation.



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21. Write the following statements are True or false:

Earlier, insulin was being collected from the pancreas of horses.



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22. Write the following statements are True or false:

Malaria arises due to genetic changes in hepatocytes.



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23. Write the following statements are True or false:

The *Pseudomonas* bacteria are useful for cleaning the hydrocarbon and oil pollutants from soil and water.



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24. Write the following statements are True or false:

Various essential elements like N, P,K become available to the crops due to earthworms and fungi.



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25. Write the following statements are True or false:

We don't have any tradition that cures the diseases with the help of natural resources.



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26. Write the following statements are True or false:

DNA fingerprinting is mainly useful in forensic sciences.



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27. Match the pairs:

* (1) Column 'A'	Column 'B'
(1) Interferon	(a) Diabetes
(2) Factor VIII *	(b) Dwarfness
(3) Somatostatin	(c) Viral infection
(4) Interleukin	(d) Cancer
	(e) Haemophilia



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28. Match the pairs:

(2) Scientist	Contribution
(1) Dr. Anand Mohan Chakrabarty	(a) Wheat production in America
(2) Dr. M. S. Swaminathan	(b) White revolution
	(c) Green revolution in India
	(d) Cleaning the oil spill



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29. Match the pairs:

(3) Organism	Substance that is absorbed
(1) <i>Pseudomonas</i>	(a) Uranium and arsenic
(2) <i>Pteris vitata</i>	(b) Selenium
	(c) Arsenic
	(d) Hydrocarbons



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30. Find the odd one out:

Green revolution, Industrial revolution, white revolution , blue revolution



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31. Find the odd word out:

DDT, malathion, chloropyriphos, NPK.



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32. Find the odd one out:

Sodium, Aluminium, potassium, phosphorus



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33. Diabetes, Anaemia, Leukemia, Thalassemia



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34. Find the odd one out:

Drying , salting, cooking, soaking with sugar



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35. Insulin: Diabetes:: Interleukin : _____



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36. Considering the relationship in the first pair, complete the second pair and rewrite:

Interferon : _____ :: Erythropoietin: Anemia.



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37. Considering the relationship in the first pair, complete the second pair and rewrite:

_____ : Dwarfness :: Factor VIII : Hemophilia



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38. White revolution : Dairy :: Blue revolution :



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39. White revolution : Increase in dairy
production :: Green revolution : _____



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40. Identify and complete the following correlations:

Nostoc, Anabaena: Biofertilizers:: Alfalfa:....



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41. Define the following:

Stem cells



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42. What is biotechnology?



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43. Genetically modified crops.



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44. Give definition/Give meanings:

Golden rice



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45. Define the following:

Vaccine



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46. Define the following:

Cloning.



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47. Give definition/Give meanings:

DNA Fingerprint:



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48. Write short notes:

Green Revolution.



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49. Write short notes:

White revolution.



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50. Define the following:

Blue revolution



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51. Name the following:

Research institutes involved with cell science.



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52. Sources of adult stem cells.



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53. Define stem cells? Mention two types of stem cells



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54. List the organs that can be donated.



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55. Bacteria used as biofertilizers



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56. Name the following:

Two main method used in animal husbandry.



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57. Name the following:

Two important aspects of human health management.



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58. Where is DNA fingerprinting research performed?



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59. Name the following:

One benefit of biotechnology to the agriculture.



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60. Give scientific reasons:

Nowadays, safer vaccines are being produced.



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61. Give scientific reasons:

Awareness about organ donation after death is increasing.



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62. Write a comparative note on usefulness and harmfulness of biotechnology.



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63. Answer the following questions:

"Biotechnology is not only beneficial but it has some harmful effects too". Express your opinion about this statement.



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64. Which products produced through biotechnology do you use in your daily life?



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65. Answer the following questions:

Write two uses of biotechnology related to human health.



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66. What is biotechnology?



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67. Explain any two commercial applications of biotechnology.



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68. Answer the following questions:

What is mainly included under biotechnology?



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69. Why some of the organs in human body are most valuable?



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70. Explain the meaning of vaccination.



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71. Write short notes:

Edible vaccines.



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72. Which precautions will you take during spraying of pesticides?



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73. Explain the importance of fruit-processing in human life.



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74. Answer the following questions:

What is DNA fingerprinting? Explain it in brief.

Where is this technique used? Give any two examples.



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75. Just like the grafting in plants, is organ transplantation possible in humans?



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76. What will happen if transgenic potatoes are cooked for consumption?



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77. What is biotechnology?





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78. Answer the following questions:

Give one use of Biotechnology.



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79. Answer the following questions:

Give one commercial use of Biotechnology



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80. Answer the following questions:

Write two bacterial examples of biofertilizers.



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81. Answer the following questions:

Write two names of crops genetically developed.



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82. Write a short note on Biotechnology - Professional uses.



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83. Write a short note on the importance of medicinal plants.



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84. State the uses of stem cells.



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85. Write a short note on cloning.



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86. Write a note on the cloning of the sheep, 'Dolly'.



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87. Write short notes:

Green Revolution.



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88. Write short notes:

White revolution.



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89. Write short notes:

Blue revolution.



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90. complete the paragraph by choosing the appropriate words given in the bracket :

(degenerated, red bone marrow, adipose connective tissue, blastocyst, umbilical cord, Differentiation)

..... Of stem cells form can form various issues

in the body. 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..... 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.



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91. Paragraph-based questions :

Green corridor refers to a special road route that enables harvested organs meant for transplants to reach the destined hospital. A 45-year-old woman, a victim of a railway accident, was declared brain dead, her husband and children agreed to donate her kidneys, liver and heart. One of her kidneys was transplanted to a patient in MGM Hospital and the second kidney helped a patient in Jaslok hospital. Her liver helped the transplant of a patient in Wockhardt Hospital. And her

heart was sent to Fortis to the patient on a super urgent priority list, transported via a green corridor covering 18 km in less than 16 minutes. This was possible due to Green corridor.

What is Green corridor?



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92. Paragraph-based questions :

Green corridor refers to a special road route that enables harvested organs meant for

transplants to reach the destined hospital. A 45-year-old woman, a victim of a railway accident. was declared brain dead, her husband and children agreed to donate her kidneys, liver and heart. One of her kidneys was transplanted to a patient in MGM Hospital and the second kidney helped a patient in Jaslok hospital. Her liver helped the transplant of a patient in Wockhardt Hospital. And her heart was sent to Fortis to the patient on a super urgent priority list, transported via a green corridor covering 18 km in less than 16 minutes. This was possible due to Green

corridor.

Which organs of brain-dead lady were transplanted?



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93. Paragraph-based questions :

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How many lives were saved from organs of one lady?



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94. Paragraph-based questions :

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How was distance of 18 km covered in 16 minutes? Why?



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95. Paragraph-based questions :

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heart was sent to Fortis to the patient on a super urgent priority list, transported via a green corridor covering 18 km in less than 16 minutes. This was possible due to Green corridor.

Who takes the decision to donate the organs?



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96. Read the following extract and answer the questions that follow :

A liberal view behind the concept of organ and

body donation is that after death our body should be useful to other needful Persons so that their miserable life would become comfortable. Awareness about these concepts is increasing in our country and people are voluntarily donating their bodies. Life of many people can be saved by organ and body donation. Blinds can regain their vision. Life of many people can be rendered comfortable by donation of organs like liver, kidneys, heart, heart valves, skin, etc. Similarly, body can be made available for research in medical studies. Many government and social organizations

are working towards increasing the awareness about body donation.

What is the liberal view behind the organ and body donation?



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97. Read the following extract and answer the questions that follow :

A liberal view behind the concept of organ and body donation is that after death our body should be useful to other needful Persons so

that their miserable life would become comfortable. Awareness about these concepts is increasing in our country and people are voluntarily donating their bodies. Life of many people can be saved by organ and body donation. Blinds can regain their vision. Life of many people can be rendered comfortable by donation of organs like liver, kidneys, heart, heart valves, skin, etc. Similarly, body can be made available for research in medical studies. Many government and social organizations are working towards increasing the awareness

about body donation.

Name any four organs that can be donated.



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98. Complete the following table:

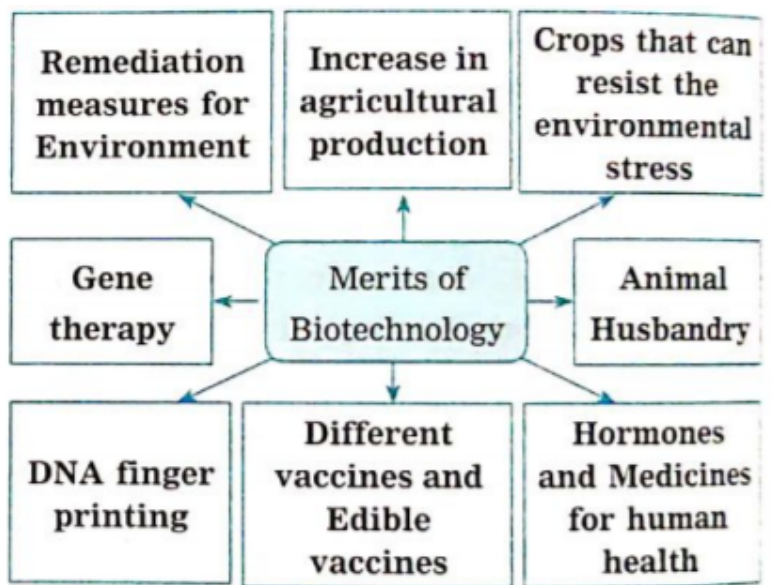
Plant/Microbes	Functions
(1) <u>Pteris vitata</u>	<u>Absorbs arsenic from soil.</u>
(2) <u>Pseudomonas</u>	<u>Separates hydrocarbon and oil from water and soil</u>
(3) <u>Sunflower</u>	<u>Absorption of uranium and arsenic</u>
(4) <u>Deinococcus radiodurans</u>	<u>Absorption of radiations of nuclear waste</u>



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99. Diagram/Chart-based questions:

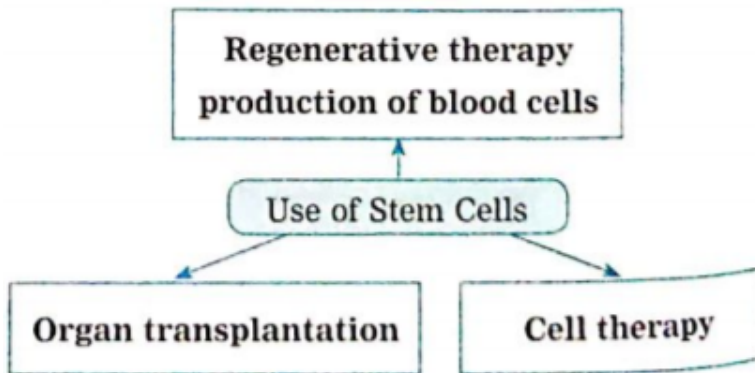
Complete the following chart:



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100. Diagram/Chart-based questions:

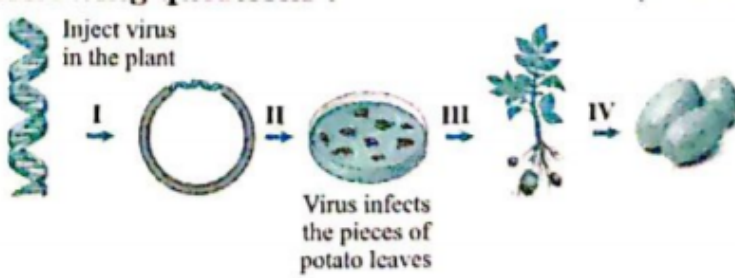
Write the correct answer in the blank boxes.



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101. Diagram/Chart-based questions:

Observe the figure and answer the following questions:



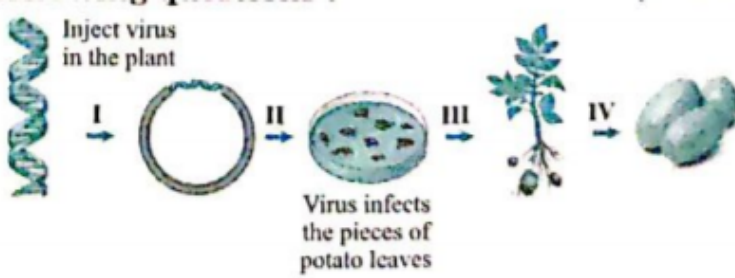
Identify the process given in the above figure.



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102. Diagram/Chart-based questions:

Observe the figure and answer the following questions:



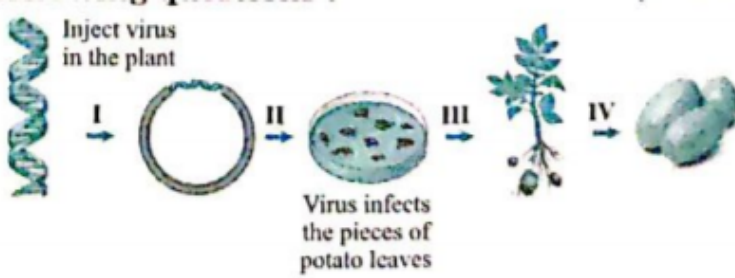
Write the importance of above process.



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103. Diagram/Chart-based questions:

Observe the figure and answer the following questions:



Write any two benefits of Biotechnology.



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104. Diagram/Chart-based questions:

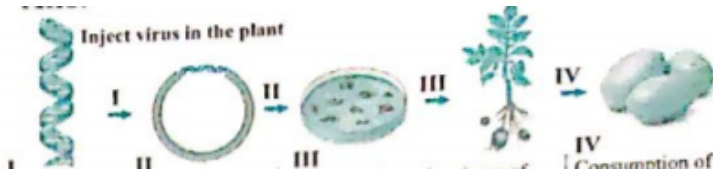
Draw well-labelled diagram of stem cell therapy.



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105. Diagram/Chart-based questions:

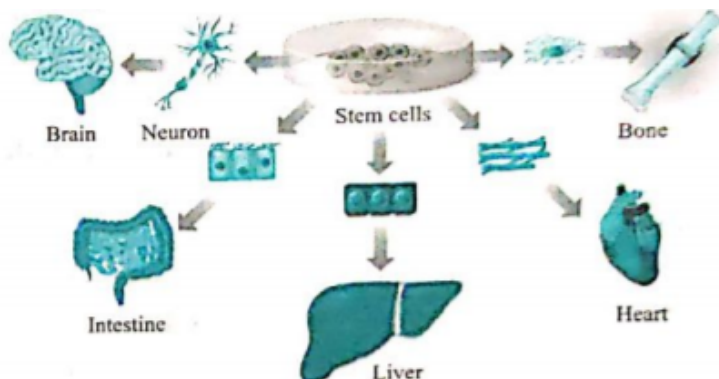
Describe in brief the steps I, II, III and IV.



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106. Diagram/Chart-based questions:

Label the following diagram:

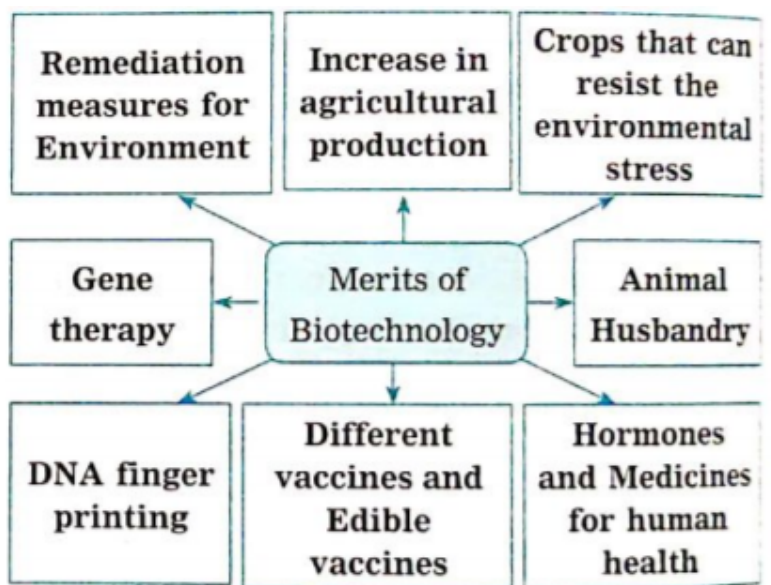




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107. Diagram/Chart-based questions:

Complete the following chart:



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