



BIOLOGY

BOOKS - CBSE COMPLEMENTARY MATERIAL BIOLOGY (HINGLISH)

PRACTICE QUESTION PAPER-2

Section A

1. Name the process and the phenomenon involved in the reproduction of Amoeba under

unfavourable conditions.



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2. Why is Thalassaemia caused? Which chromosome is affected during Beta Thalassaemia?



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3. Name the chemical present in smack and give the scientific name of the plant from

which it is obtained.



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4. Lactic acid bacteria help in making curd.

What are the other benefits of Lactic acid bacteria?



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5. Which methods are used by the animals to suspend their activities during adverse

conditions?



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6. Why is unleaded petrol better for the vehicles equipped with a catalytic converter?



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7. Trisomy of sex chromosomes can cause disorders in human beings. Name one such disorder with the karyotype associated with it.



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Section B

1. Cucurbits are dioecious while date palm is monoecious. Why are they called so?



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2. What are meiocytes?



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3. Infertility cases may occur due to inability of the male partner to inseminate the female or due to very low sperm counts in the ejaculates. Which methods can be used to correct this?



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4. Name and explain the mode of action of any one type of IUD.



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5. What is cryopreservation? Mention how it is used in conservation of biodiversity

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6. Justify the need for signing of 'Montreal Protocol' by the participating nations in 1987.

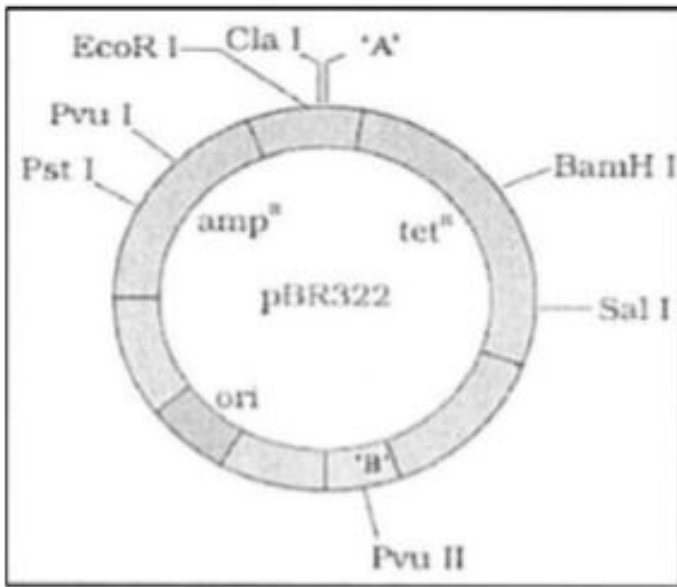
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7. Insect resistance in host crop plants may be due to morphological characteristics. Support the statement with two examples.



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8. Identify the regions marked as 'A' and '13' in the given figure and write their roles too:



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9. What is outcrossing? What are its two benefits?

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10. What is 'Oni'? Why is it considered important during cloning of a vector?

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11. Compare the mechanism of evolution proposed by Charles Darwin and Hugo de Vries.

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Section C

1. Continued self-pollination results in inbreeding depression. Plants have developed strategies to prevent both autogamy and geitonogamy. Write briefly about the strategies in plants which help in doing so



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2. How has plant breeding helped in improving the variety of sugarcane?



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3. Draw a schematic diagram of a part of double stranded dinucleotide DNA chain having all the four nitrogenous bases and showing the correct polarity.



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4. Some traits in human beings show criss-cross inheritance. Name any two such traits.

With a suitable cross show the inheritance of any one of such traits which result in one-fourth of the progeny with the genetic defect.



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5. The rate of appearance of new forms is linked to the life cycle or the life span. Explain with a suitable example.



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6. What kind of detritus decomposes at a faster rate? Name any two factors that enhance the rate of decomposition.



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7. What are the various steps of humification and mineralisation that occurs during the process of decomposition?



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8. What are biofertilisers? Name a symbiotic fungus which forms mycorrhizae.



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9. Identify a, b, c and d in the following table:

| Sl. No. | Microbe | Product |
|---------|-------------------------------|--------------|
| 1. | 'a' | Citric Acid |
| 2. | 'b' | Butyric Acid |
| 3. | <i>Trichoderma polysporum</i> | 'c' |
| 4. | <i>Streptococcus</i> | 'd' |



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10. How does RNA interference help in developing resistance in tobacco plant against nematode infection?



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11. Gonadotropin releasing hormone (GnRH), released in males on attaining puberty results in release of gonadotropins. Name the gonadotropins released by the hormone and the roles of gonadotropins in males.





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12. Ova from the wife/donor (female) and sperms from the husband/donor (male) are collected and are induced to form zygote under simulated conditions in the laboratory.

Which techniques are used after this?



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13. A segment of DNA has a total of 1500 nucleotides, out of which 280 are adenine

containing nucleotides. With suitable reasons and step by step calculation, determine the number of pyrimidines bases possessed by this segment of DNA.



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14. Explain the three steps of Hershey and Chase experiment that helped them to prove that DNA is the hereditary material. What were the interpretations of their experiment?



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15. Why isn't DNA able to pass through the cell membrane? How bacteria are made competent to take up a plasmid?



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16. How is the alien DNA introduced in a plant cell? Give examples of pathogens that can be used as a vector.



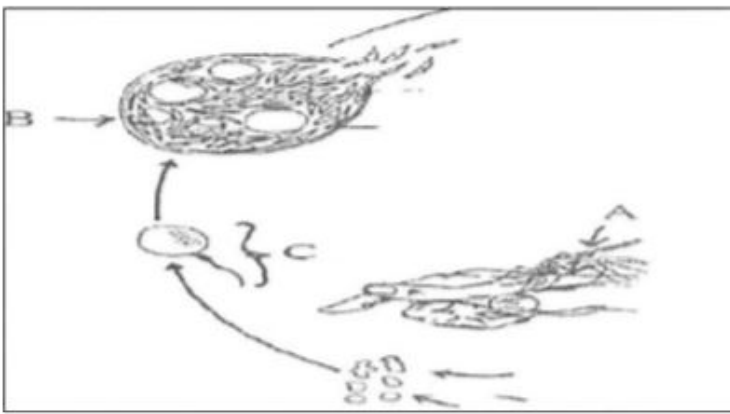
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17. With the help of a schematic diagram show the use of Eco RI for making a recombinant DNA. Name the palindromic sequence recognised by Eco RI



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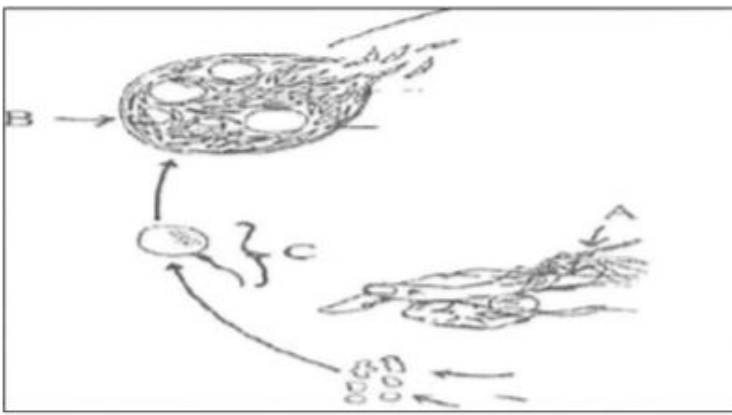
18. A part of life cycle of Plasmodium is given below. Answer the questions on the basis of the life cycle.



Name the event 'C' and the organ where this event occurs

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19. A part of life cycle of Plasmodium is given below. Answer the questions on the basis of the life cycle.



Name the organ 'B' and the cells being released from it.

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20. A part of life cycle of Plasmodium is given below. Answer the questions on the basis of the life cycle.



Name the most fatal species of Plasmodium and mention the role of 'A' in the life cycle of Plasmodium.

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21. Why are co-extinction and introduction of alien species considered responsible for the

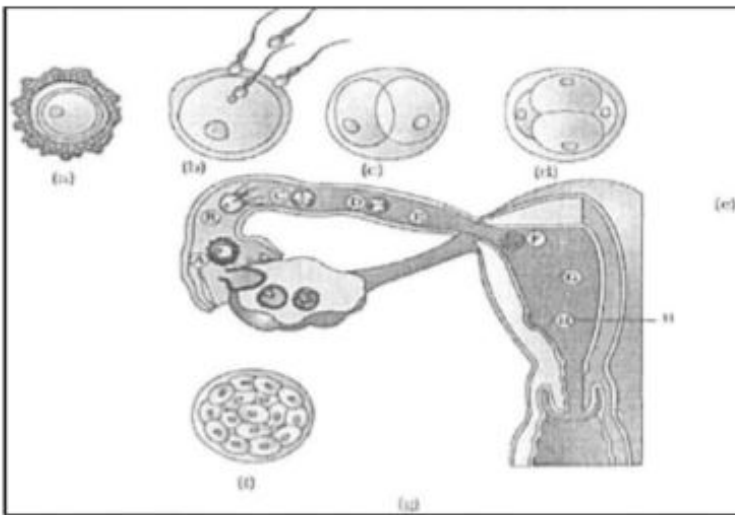
loss of biodiversity?



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Section D

1. The following is the illustration of the Transport of ovum, fertilisation and passage of growing embryo through fallopian tube.

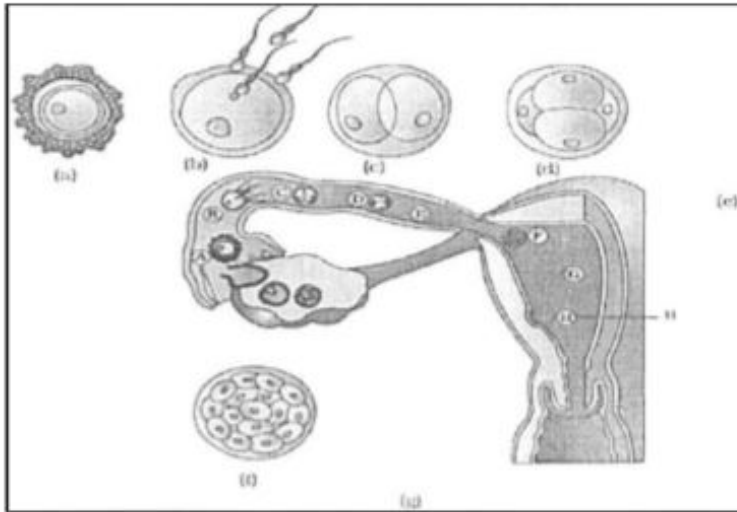


Identify and draw the stages labelled 'e' and 'g'.

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2. The following is the illustration of the Transport of ovum, fertilisation and passage of

growing embryo through fallopian tube.

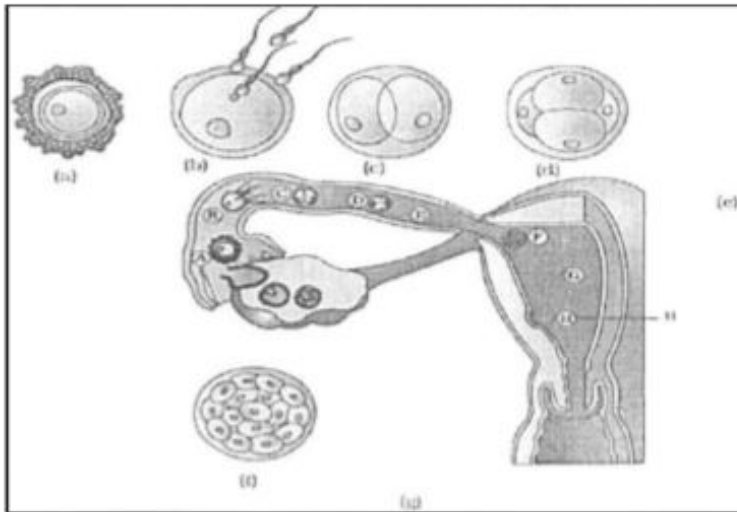


Name the process represented by 'H' and the layer of maternal tissue involved in it.



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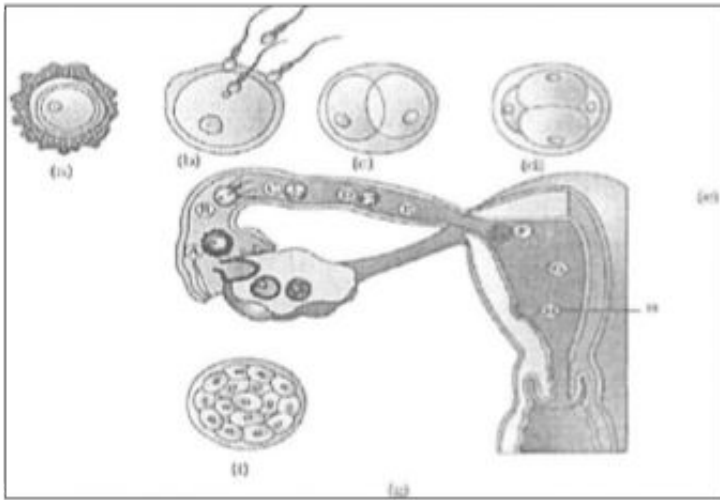
3. The following is the illustration of the Transport of ovum, fertilisation and passage of growing embryo through fallopian tube.



What are the roles of cells present in stage 'g'?

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4. The following is the illustration of the Transport of ovum, fertilisation and passage of growing embryo through fallopian tube.



How is placenta formed?



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5. The development of endosperm precedes the development of embryo in angiospermic seed. Why?



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6. How does a meiocyte develop into the female gametophyte in an angiosperm? Draw a labelled diagram of the structure bearing the female gametophyte in an angiosperm

and label the nutritive and the protective layer present in it.



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7. Compare the growth models for the population growth of a species.



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8. Explain the Darwin's concept of 'Fitness of species'.



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9. What is an ecological pyramid? Write any two limitations of ecological pyramids



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10. Compare the pyramids of energy, biomass and numbers.



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11. Watson and Crick suggested the copying mechanism for DNA wherein the two strands separate and act as template for the synthesis of new complementary strands. With a suitable diagram, show the replication of DNA that occurs within a small opening of DNA helix.



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12. Watson and Crick suggested the copying mechanism for DNA wherein the two strands

separate and act as template for the synthesis of new complementary strands. Centrifugal force and the use of isotopes helped to prove the mechanism of replication in *E. coli*. Explain how it has helped.



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13. The shape of pea seeds and the size of starch grains in *Pisum sativum* show an inheritance pattern which deviates from Mendelian law of dominance.

How does this pattern of inheritance differ from the Mendelian law of dominance?



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14. The shape of pea seeds and the size of starch grains in *Pisum sativum* show an inheritance pattern which deviates from Mendelian law of dominance.

Workout the monohybrid-cross to show the inheritance of the above characters.



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15. The shape of pea seeds and the size of starch grains in *Pisum sativum* show an inheritance pattern which deviates from Mendelian law of dominance.

What is the name given to the pattern of inheritance in which one gene controls more than one character?



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16. The shape of pea seeds and the size of starch grains in *Pisum sativum* show an inheritance pattern which deviates from Mendelian law of dominance.

State the pattern of inheritance in which one character is controlled by more than one gene.



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