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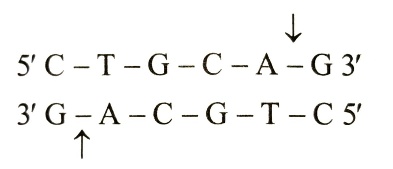
**Max Time : 2 hr** **Class = 12th Biology Test**  **Max Marks : 50**

**Topic : REPRODUCTION AND BIOTECHNOLOGY**

1. Multiple choice Questions: [ 1 x 10 = 10 ]
2. Identify the diseases which is not a sexually transmitted diseases :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Gonorrhea | b) Syphilis | c) Amoebiasis | d) Chlamydiosis |

1. Given below is the restriction site of restriction endonucleases Pst I and the cleavage sites on a DNA molecule.



|  |  |
| --- | --- |
| a) 5’ C – T – G C – A – G 3’  3’ G – A – C – G – T C 5’ | b) 5’ C – T G – C – A – G 3’  3’ G – A – G – C T – C 5’ |
| c) 5’ C – T – G – C A – G 3’  3’ G – A – C – G T – C 5’ | d) 5’ C – T – G – C – A G 3’  3’ G A – C – G – T – C 5’ |

1. Remnants of nucellus are persistent during seed development is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Pea | b) Groundnut | c) wheat | d) Black pepper |

1. Which of the following techniques is based on the principle of antigen-antibody interaction?

|  |  |
| --- | --- |
| a) PCR | b) ELISA |
| c) Recombinant DNA technology | d) Gene Therapy |

1. In humans, at the end of the first meiotic division, the male germ cells differentiate into the :

|  |  |
| --- | --- |
| a) Primary spermatocytes | b) Secondary spermatocytes |
| c) Spermatids | d) Spermatogonia |

1. The construction of the first recombinant DNA was done by using the native plasmid of :

|  |  |
| --- | --- |
| a) E.coli | b) Salmonella typhimurium |
| c) Bacillus thuringiensis | d) Yeast |

1. The aquatic plant having long and ribbon like pollen grains is :

|  |  |  |  |
| --- | --- | --- | --- |
| a) Vallisneria | b) Hydrilla | c) Eichhornia | d) Zostera |

1. A procedure that finds use in testing for genetic disorders, but it also misused for foeticide is :

|  |  |
| --- | --- |
| a) Lactational Amenorrhea | b) Amniocentesis |
| c) Artificial insemination | d) Parturition |

1. Which of the following bacteria is used for the production of transgenic plants?

|  |  |
| --- | --- |
| a) Escherichia coli | b) Pseudomonas |
| c) Staphylococcus aureus | d) Agrobacterium tumefaciens |

1. The nature of meiotic division during oogenesis in a human female is :

|  |  |
| --- | --- |
| a) Equal cell division | b) Suspended cell division |
| c) Continuous cell division | d) Rapid cell division |

**One marks questions [ 1 x 4 = 4 ]**

1. How is Rosie considered different from a normal cow? Explain.
2. How do the pollen grains of Vallisneria protect themselves?
3. How is the action of endonucleases different from that of exonucleases?
4. Mention the function of trophoblast in human embryo.

Or

What stimulates pituitary to release the hormone responsible for parturition? Name the hormone.

**Two marks questions [ 2 x 5 = 10 ]**

1. Explain the role of pituitary and ovarian hormones in the menstrual cycle of human females.
2. An anther with malfunctioning tapetum often fails to produce viable male gametophytes. Give one reason.
3. (i) Why are plants raised through micropropagation termed as somaclones?

(ii) Mention two advantage of this techniques.

1. Mention the programme that are taken care by Reproduction and Child health Care Programme.

Or

Describe the sterilization methods in both male and female with help of diagram.

1. (i) What is Bioreactor? How does it work?

(ii) Name two commonly used bioreactors.

**Three marks questions [ 3 x 4 = 12 ]**

1. Give reason :
2. DNA cannot pass into a host cell through the cell membrane.
3. Proteases are added during isolation of DNA for genetic engineering.
4. Single cloning sites is preferred in a vector.
5. With the help of an example of each explain the following :

(a) Apomixis (b) Parthenocarpy (c) Polyembryony

1. Why is molecular diagnosis preferred over conventional methods? Name any two techniques and explain it briefly.

Or

Mention the causes of ADA deficiency and how has genetic engineering helped patients suffering from it?

1. Draw male reproductive system and explain the functions of the following structure in the male reproductive system. (a) Scrotum (b) Leydig cells (c) Male accessory glands

**Case – Study [ 4 ]**

1. Read the following answer the questions given below :

During a temple visit, Divya came across her old friend. She learnt that her friend had been visiting different temples and praying to get a child. Divya was astonished and told her friend about the various techniques that assist the childless couple to conceive.

1. What is ART?
2. How is ART helpful, if the male partner has low sperm count in ejaculate?
3. What ART is prescribed to women who cannot produce ovum but can provide suitable environment for fertilization?
4. Mention the limitation of ART.

**Five marks questions [ 5 x 2 = 10 ]**

1. (i) Explain monosporic development of embryo sac in the ovule of an angiosperm.

(ii) Draw a diagram of the mature embryo sac of an angiospermic ovule and label any 6 parts in it.

1. (i) Mention the events that induce the completion of meiotic division of the secondary oocyte.

(ii) Trace the journey of the ovum from the ovary, its fertilization and further development until the implantation

of the embryo