

MUDRA LIFE SCIENCES

VOLUME-07

PART B & C

MODEL QUESTION BANK FOR THE TOPICS:

12. APPLIED BIOLOGY

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12. APPLIED BIOLOGY

UNIT - 1

1. Fusion of protoplast of two different species of plants is called
 - (a) Intergenetic somatic hybrids
 - (b) Interspecific somatic hybrids
 - (c) Both
 - (d) None of these

2. Hybrid tobacco plant with diploid genome of 42 chromosomes obtained by fusion of protoplasts of *Nicotiana glauca* and *N. langsdorfi* is
 - (a) Interspecific somatic hybrid
 - (b) Intergenetic somatic hybrid
 - (c) Both
 - (d) None of these

3. Hybrid plants obtained by fusion of protoplasts of plants such as Petunia and Atropa, Nicotinia and Lycopersicum are
 - (a) Interspecific
 - (b) Intergenetic
 - (c) Both
 - (d) None of these

4. To combine genes of even sexually incompatible and unrelated organisms, the technique used is
 - (a) Intergenetic protoplast fusion
 - (b) Interspecific protoplast fusion
 - (c) Genetic engineering
 - (d) Sexual conjugation

5. The technique by which protoplasts are carefully separated from somatic cells, of any two desirable plants or animals and made to combine with each other is called
 - (a) Fusion
 - (b) Protoplast- fusion
 - (c) Genetic engineering
 - (d) Hybridization

6. The aim of genetic engineering is
- (a) To add, remove or repair the gene so as to change the phenotypic characteristics of plant according to will
 - (b) To prepare new genes
 - (c) To construct machines to make new genes
 - (d) To educate people about use and misuse of genetics
7. The technique involved for genetic manipulations or genetic engineering involves
- (a) Isolation, purification of desired genetic material
 - (b) Synthesis of artificial gene or segment of DNA in a test tube with known sequence of nucleotides
 - (c) Transfer of genetic segment from test tube into a cell or from one organism to another through plasmids
 - (d) All of these
8. Asexual or parasexual hybridization is also known as
- (a) Gene transfer
 - (b) Protoplast fusion
 - (c) Mitosis
 - (d) Mitosis
9. Plant tissue culture may be useful in
- (a) Current methods of cultivation and Forestry through clonal propagation
 - (b) Somaclonal variations and production of haploid plants from cultivated anthers
 - (c) Development of new varieties via cellular and molecular genetics
 - (d) All of these
10. Plant tissue culture and protoplast technology involve culturing of plant cells and protoplasts and then inducing morphogenesis by the manipulation of
- (a) Vitamins
 - (b) Proteins
 - (c) Plant hormones
 - (d) Nucleic acids

11. To obtain plants free of viruses or produce identical plants (mericones) in large number we use
- (a) Shoot apex culture
 - (b) Meristem cultures
 - (c) Root cultures
 - (d) Both a and b
12. Regeneration of plants from callus or plant protoplasts often results in recovery of
- (a) Somaclonal variants
 - (b) Crop plants
 - (c) Mericons
 - (d) None.
13. Hybrid vigor is well known in sexual hybridization, somatic hybridization by protoplast fusion may produce
- (a) Greater vigor in hybrids
 - (b) Enhanced yield in many crops
 - (c) Lower vigor in hybrids
 - (d) Both a and b
14. Basis for commercial production of plant derived substances like pharmaceutical, agricultural chemicals, food colour, flavors and fragrance is
- (a) Plant cell culture technology
 - (b) Molecular biology
 - (c) Plant physiology
 - (d) Water technology
15. Cells which have had the cell walls enzymatically removed are called
- (a) Chloroplast
 - (b) Tonoplast
 - (c) Protoplast
 - (d) None of these
16. For plants assay of viruses is done in terms of
- (a) Plaque forming units
 - (b) Local lesion
 - (c) Both
 - (d) None of these

17. Viruses can be manipulated genetically.
- (a) *In vitro*
 - (b) *De novo*
 - (c) *In situ*
 - (d) None of these
18. The protein removes terminal sialic acid residue from cell surface proteins (influenza)
- (a) Nucleocapsid
 - (b) Matrix
 - (c) Neuraminidase
 - (d) Hemagglutinin
19. Replication of cauliflower mosaic virus takes place in
- (a) Nucleus
 - (b) Cytoplasm
 - (c) Both
 - (d) None
20. Viruses spread from cell to cell through
- (a) Plasmodesmata
 - (b) Xylem
 - (c) Phloem
 - (d) None of the above.
21. Viruses spread from leaf to leaf through vascular tissues of
- (a) Phloem
 - (b) Xylem
 - (c) a and b
 - (d) None of the above.
22. Which of the following viruses has the broadest host range and is transmitted by:
- (a) Rhabdovirus
 - (b) Burya
 - (c) T4 mosaic virus
 - (d) None

23. Which one is a *wrong* statement
- (a) Dolly was created through reproductive cloning using Udder cells
 - (b) Apotosis is the Programed cell death
 - (c) Chorionic Villi Sampling (CVS) is a post natal diagnosis
 - (d) Shot gum approach is used in making genomic library
24. Leptocorisa is a major pest of
- (a) Paddy
 - (b) Coconut
 - (c) Wheat
 - (d) Sugarcane
25. DNA Finger printing requires only a minute quantity of DNA sample such as WBC of blood stain because
- (a) Large quantity of DNA is available in WBC
 - (b) DNA contains nitrogen bases
 - (c) DNA can be amplified through PCR
 - (d) DNA determines the heredity.
26. Due to continuous intake of Antibiotics, many strains of bacteria becomes resistant to antibiotics. This is because of
- (a) Bacterial transformation
 - (b) Bacterial transduction
 - (c) Conjugation
 - (d) Mutation
27. Which of the following would best demonstrate that the genomes of differentiated cells are genetically equivalent?
- a) Isolation and culture of blastomeres of two or four-celled embryos.
 - b) Isolation and culture of nuclei in the presence of cells from which they have been removed.
 - c) Isolation and fusion of two different somatic cell types.
 - d) Injection of a nucleus secluded from an adult cell into an egg from which the nucleus has been removed.

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