

**TELANGANA UNIVERISTY**  
**SSR DEGREE & PG COLLEGE (5029)**  
**M.Sc BIOTECHNOLOGY**

**INTERNAL ASSESSMENT -II**

**QUESTION BANK**

**SEM – IV PAPER : ANIMAL BIOTECHNOLOGY**

**I) CHOOSE THE CORRECT ANSWERS:**

1. Selective breeding involves:

- A) Random mating
- B) Choosing superior animals for reproduction
- C) Genetic engineering
- D) Cloning

Answer: B

2. Cross breeding is mainly used to:

- A) Produce identical offspring
- B) Combine desirable traits of two breeds
- C) Reduce genetic variation
- D) Eliminate mutations

Answer: B

3. Heterosis (hybrid vigor) is observed in:

- A) Inbreeding

B) Cross breeding

C) Mutation

D) Cloning

Answer: B

4. Embryo transfer technology helps in:

A) Reducing milk production

B) Increasing reproductive efficiency

C) Slowing genetic progress

D) Preventing fertilization

Answer: B

5. Superior germplasm refers to:

A) Low-quality genetic material

B) Average animals

C) High genetic merit animals

D) Diseased animals

Answer: C

6. Superovulation is induced to:

A) Decrease ovulation

B) Produce multiple ova

C) Stop reproduction

D) Delay estrus

Answer: B

7. Oestrus synchronization is used to:

A) Stop estrus cycle

B) Align estrus cycles of animals

C) Induce mutation

D) Reduce fertility

Answer: B

8. In vitro fertilization (IVF) occurs:

A) Inside uterus

B) Inside ovary

C) Outside the body in lab

D) Inside embryo

Answer: C

9. In vitro maturation (IVM) refers to:

A) Maturation of sperm

B) Maturation of oocytes outside the body

C) Fertilization process

D) Embryo transfer

Answer: B

10. Embryo preservation is commonly done by:

- A) Heating
- B) Drying
- C) Cryopreservation
- D) Irradiation

Answer: C

11. Micromanipulation involves:

- A) Large-scale breeding
- B) Handling cells using microscopic tools
- C) Feeding animals
- D) Hormone injection

Answer: B

12. Somatic cell cloning produces:

- A) Genetically different animals
- B) Identical copies of donor organism
- C) Hybrid animals
- D) Mutated offspring

Answer: B

13. The famous cloned sheep Dolly was produced by:

- A) IVF
- B) Artificial insemination
- C) Somatic cell nuclear transfer
- D) Cross breeding

Answer: C

14. Embryo sexing is used to:

- A) Increase fertility
- B) Determine sex of embryo before birth
- C) Modify genes
- D) Clone embryos

Answer: B

15. Gene mapping helps to:

- A) Destroy genes
- B) Locate genes on chromosomes
- C) Clone animals
- D) Induce mutations

Answer: B

16. Marker-assisted selection (MAS) is based on:

- A) Physical traits only
- B) DNA markers

- C) Environmental conditions
- D) Random selection

Answer: B

17. MAS improves livestock by:

- A) Reducing productivity
- B) Selecting animals with desirable genes
- C) Eliminating reproduction
- D) Increasing disease spread

Answer: B

18. Genetic improvement of livestock mainly aims to:

- A) Decrease production
- B) Increase disease susceptibility
- C) Improve productivity and quality
- D) Reduce genetic variation

Answer: C

19. Embryo transfer allows:

- A) One offspring per animal
- B) Multiple offspring from superior female
- C) No reproduction
- D) Reduced fertility

Answer: B

20. Cryopreservation of embryos uses:

A) High temperature

B) Liquid nitrogen

C) Sunlight

D) Oxygen gas

Answer: B

## **II) FILL IN THE BLANKS:**

1) Transgenic animals are produced by introducing foreign DNA into the \_\_\_\_\_ of an organism.

Answer: genome

2) In the microinjection method, DNA is directly injected into the \_\_\_\_\_ of a fertilized egg.

Answer: nucleus

3) \_\_\_\_\_ vectors are commonly used to transfer genes into animal cells for transgenesis.

Answer: Retroviral

4) Embryonic stem cells used in transgenesis are derived from the \_\_\_\_\_ stage embryo.

Answer: blastocyst

5) Transgenic \_\_\_\_\_ are widely used as model organisms in biomedical research.

Answer: mice

6) Animals engineered to produce pharmaceutical proteins are called \_\_\_\_\_.

Answer: bioreactors

7) Gene therapy involves the correction of defective genes in \_\_\_\_\_ cells.

Answer: somatic

8) The process of producing genetically identical organisms is called \_\_\_\_\_.

Answer: cloning

9) The first cloned mammal \_\_\_\_\_ was produced using somatic cell nuclear transfer.

Answer: Dolly (sheep)

10) \_\_\_\_\_ involves transplantation of organs between different species.

Answer: Xenotransplantation

11) Chemical gene transfection commonly uses \_\_\_\_\_ to facilitate DNA entry into cells.

Answer: calcium phosphate

12) \_\_\_\_\_ transfection uses electric pulses to introduce DNA into cells.

Answer: Electroporation

13) Sub-unit vaccines contain only \_\_\_\_\_ parts of the pathogen.

Answer: antigenic

14) Vaccines that use genetically modified organisms are called \_\_\_\_\_ vaccines.

Answer: recombinant

15) \_\_\_\_\_ vaccines use weakened forms of pathogens to induce immunity.

Answer: Attenuated

16) Anti-idiotypic vaccines are based on antibodies that mimic \_\_\_\_\_.

Answer: antigens

17) Monoclonal antibodies are produced using \_\_\_\_\_ technology.

Answer: hybridoma

18) Monoclonal antibodies help in preventing \_\_\_\_\_ rejection in transplant patients.

Answer: graft

19) Tissue engineering involves the combination of cells, scaffolds, and \_\_\_\_\_.

Answer: growth factors

20) \_\_\_\_\_ culture systems better mimic in vivo conditions compared to 2D cultures.

Answer: 3D

### **III) ANSWER THE FOLLOWING QUESTIONS**

1) Define Cross Breeding?

2) Define Gene therapy?

3) What is microinjection?

4) Write about Bioartificial skin?

5) What is Xeno transplantation?