31. a.	Explain the types of immunity. Define the immunizing agents by elaborating on vaccines (types, general production steps).	12	2	4	3
	(OR)				
b.	Differentiate the recombinant vs DNA vaccines. Discuss about the steps involved in recombinant vaccine production using HB as an example.	12	2	4	3
32. a.	What are transgenic animal? Why do we require them? Explain different methods to generate transgenic animals.	12	2	2	3
	(OR)				
b.	What are monoclonal antibodies? Describe the detailed steps of production of monoclonal antibodies.	12	2	2	3

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Reg. No.														

B.Tech. DEGREE EXAMINATION, MAY 2023
Sixth Semester

18BTC203J – ANIMAL BIOTECHNOLOGY
(For the candidates admitted from the academic year 2018-2019 to 2021-2022)

Note:
(i) **Part - A** should be answered in OMR sheet within first 40 minutes and OMR sheet should be handed over to hall invigilator at the end of 40th minute.
(ii) **Part - B & Part - C** should be answered in answer booklet.

Time: 3 hours Max. Marks: 100

	Marks	BL	CO	PO

PART – A (20 × 1 = 20 Marks)
Answer **ALL** Questions

1. What is true about composite breeding? 1 2 1 3
   (A) Enhanced Heterosis% (B) Depressed Heterosis%
   (C) No change in Heterosis% (D) Heterosis% is as high similar to cross breeding

2. If you use random primers in a polymerase chain reaction and generate a set of DNA segments, it is 1 2 1 3
   (A) AFLP (B) RAPD
   (C) RFLP (D) DNA fingerprinting

3. Administration of GH leads to 1 3 5 3
   (A) Decreased muscular growth (B) Increased carbohydrate reserve
   (C) Decreased lipid utilization (D) Increased translation

4. Number of amino acids present in a peptide/hormone whose stimulation results in glucocorticoids secretion from adrenal gland. 1 3 5 3
   (A) 38 (B) 48
   (C) 39 (D) 49

5. Identify the unrelated one from the list of parameters to choose a cell line 1 2 3 3
   (A) Species (B) Phenotypic expression
   (C) Heterosis (D) Validation

6. Optimal pH range for a fibroblast is 1 2 3 3
   (A) 7.4 – 7.5 (B) 7.4 – 7.7
   (C) 7.0 – 7.4 (D) 7.2 – 7.4

7. Following method is not commonly used to diagnosis pregnancy? 1 2 2 3
   (A) Rectal palpation (B) Estrus detection
   (C) Ultrasonography (D) Ethogram

8. Which of the following combinational activity is necessary to clear the lungs? 1 2 2 3
   (A) α-antitrypsin inhibition of elastase
   (B) α-antitrypsin dis-inhibition of elastase
   (C) α-antitrypsin activation of tyrosine hydroxylase
   (D) α-antitrypsin inhibition of tyrosine hydroxylase

9. Identify the non-bacterial infection in animals from the list. 1 2 4 3
   (A) Anthrax
   (B) Distemper
   (C) Foot and mouth disease
   (D) Black leg

10. Johne's disease affects the _____ 1 2 4 3
   (A) Circulatory system
   (B) Nervous system
   (C) Intestinal system
   (D) Reproductive system

11. Which of the following is NOT a behavioral trait? 1 2 1 3
   (A) Ploughing
   (B) Riding
   (C) Twinning
   (D) Docility

12. Crooked tail syndrome is a result of _____gene mutations. 1 2 1 3
   (A) MRC2
   (B) MEN2B
   (C) RFN11
   (D) MOCS1

13. Which of the following sequence is true 1 2 3 3
   (A) Subculture to tertiary culture to cell line to cell strain
   (B) Primary culture to subculture to cell line to cell strain
   (C) Primary culture to cell strain to subculture to cell line
   (D) Cell strain to subculture to cell line

14. Ca^{2+} in salts of the complete media functions as 1 2 3 3
   (A) Regulators of intracellular charge
   (B) Influencer of cell proliferation
   (C) Regulator of membrane potential
   (D) Nutritional precursors

15. Following hormonal stimulation produces somatomedins in which organ? 1 3 5 3
   (A) STH in brain
   (B) STH in liver
   (C) GH in testes
   (D) STH in kidney

16. Specifically, which of the following amino acids are important for wool growth 1 3 5 3
   (A) Cystine, methionine and lysine
   (B) Cysteine, alanine and lysine
   (C) Methionine, glutamate and lysine
   (D) Cysteine, methionine and glutamate

17. Which of the following is a conjugate vaccine? 1 2 4 3
   (A) BCG
   (B) Typhoid
   (C) OPV
   (D) Rotavirus

18. Example for inactivated bacterial vaccine 1 2 4 3
   (A) Triangle 5
   (B) Bovilis BTV8
   (C) Asymptol
   (D) Comirnaty

19. The temperature at which sperms are cryopreserved 1 2 2 3
   (A) –75°C
   (B) –196°C
   (C) –146°C
   (D) –65°C

20. False about transgenic models in drug development 1 2 2 3
   (A) Validation of drug targets
   (B) Identification drug targets
   (C) Drug amplification
   (D) Safety testing

PART – B (5 × 4 = 20 Marks)

Answer **ANY FIVE** Questions

	Marks	BL	CO	PO
21. Using diagrammatic representation, describe the type of chromosomal abnormalities.	4	2	1	3
22. What is embryo-sexing and embryo-splitting? Describe their advantages.	4	2	2	3
23. Explain the steps in secretion of adrenocorticotropic hormone and give examples for its application in animal husbandry and clinical science.	4	3	5	3
24. What is trait? Mention the selection criteria in animal husbandry? Describe the variability of trait and correlated traits.	4	2	1	3
25. Define the types of manipulations to improve lactation.	4	3	5	3
26. Elaborate on the types and limitations of organ cultures.	4	2	3	3
27. Describe the details about vaccine against bluetongue diseases in cattle.	4	2	4	3

PART – C (5 × 12 = 60 Marks)

Answer **ALL** Questions

	Marks	BL	CO	PO
28. a. Describe in detail the applications of RFLP in animal husbandry and how does it different from AFLP.	12	2	1	3
(OR)				
b. Elaborate on breedings "grading-up" and 'rotational cross" and emphasize the differences between them.	12	2	1	3
29. a. What is recombinant technology and describe the detailed steps how this technology can be used to increase milk production.	12	3	5	3
(OR)				
b. Explain in detail about the mode of action of probiotics their uses and applications in different fields.	12	3	5	3
30. a. What are the different components of serum? Explain in detail about their function.	12	2	3	3
(OR)				
b. Define and elaborate on spheroids and further emphasize on neuronal aggregates.	12	2	3	3