F.Y. M. Ph
Pharmacology 15/04/25
Sem - I

Duration : 3 hours **Total Marks : 75**

Q. 1 Attempt all multiple-choice questions **20 M**

Sr No	Questions		Options
1	Which of the following statements is true about the chromatin composition?	a	DNA
		b	RNA
		c	DNA and proteins
		d	DNA, RNA and proteins
2	Restriction enzymes were discovered by	a	Werner Arber, Hamilton O. Smith, and Daniel Nathans
		b	Alexander Fleming
		c	Paul Berg
		d	Lederberg and Tatum
3	siRNA is	a	Endogenous Single Stranded RNA
		b	Exogenous Single Stranded RNA
		c	Electric Single Stranded RNA
		d	Elastic Single Stranded RNA
4	Klenow fragment is derived from	a	DNA Ligase
		b	DNA Pol-I
		c	DNA Pol-II
		d	Reverse Transcriptase
5	A genomic DNA possesses functioning units, a group of genes under the influence of promoters known as	a	genes
		b	operons
		c	anticodon
		d	Codon
5	Southern blotting is	a	Attachment of probes to DNA fragments
		b	Transfer of DNA fragments from electrophoretic gel to a nitrocellulose sheet
		c	Comparison of DNA fragments to two sources
		d	Transfer of DNA fragments to electrophoretic gel from cellulose membrane
6	ELISA is	a	Using radiolabelled second antibody
		b	Usage of RBCs
		c	Using complement-mediated cell lysis
		d	Addition of substrate that is converted into a coloured end product

7	Gene mapping provides useful information about chance of	a	inheritance of disorders
		b	inheritance of genes
		c	inheritance of recessive gene
		d	inheritance of dominant gene
8	There are ------ histones in the core of a nucleosome	a	8
		b	6
		c	4
		d	2
9	PCR technique was invented by	a	Karry Mullis
		b	Boyer
		c	Sanger
		d	Cohn
10	RNA interference helps in	a	Cell proliferation
		b	Micropropagation
		c	Cell defence
		d	Cell differentiation
11	In eukaryotes and bacteria, the most common form of regulation is	a	promoter control
		b	translation control
		c	repressor control
		d	transcriptional control
12	Which of the following has an antagonistic action to adenylate cyclase?	a	The active GTP-á subunit of a G protei
		b	Phosphodiesterase
		c	Cyclic adenosine monophosphate (cAM
		d	Protein kinase
13	Which of the following signalling molecules enters the cell to initiate its action?	a	Thyroxin
		b	Insulin
		c	Glucagon
		d	Transferrin
14	Regulatory proteins turn transcription off through binding to a site rapidly at the front of the promoter and many times even overlaps the promoter, this site is the	a	regulatory site
		b	operator site
		c	suppressor site
		d	transcriptional control site

15	——— is to bring cells or tissues to a zero metabolism and nondividing state.	a	Apoptosis
		b	Cell Death
		c	Cryopreservation
		d	Humanization
16	Enzymes that cut DNA at or near a specific recognition nucleotide sequence are known as.....	a	Restriction enzymes
		b	Recognition enzymes
		c	Polypeptides
		d	Cutter Proteins
17	----- is aprocess of transferring a desirable DNA into the living cell through, the use of glass micropipette	a	Micro pipetting
		b	Micro modification
		c	Microinjection
		d	Micronization
18	Treatment of disease by inducing, enhancing, or suppressing immune response in known as -----	a	Immunotherapy
		b	Immunity
		c	Chemotherapy
		d	Homeopathy
19	Vector based cancer vaccine uses ----- as vector to stimulate patients' immune system.	a	Virus
		b	Proteins
		c	Amino acids
		d	Free radicals
20	cDNA is synthesised from RNA by the enzyme	a	DNA polymerase
		b	DNA synthetase
		c	DNA convertase
		d	Reverse transcriptase

Q. 2 Answer Any Two from the following. **20 M**

1. Write in detail about Restriction Endonucleases (molecular scissoirs)and add a note on Phages as cloning vectors used in recombinant DNA technology.

2. Enlist Different types of Immunoblotting techniques and write in details about southern Blotting and its applications.

3. Write in detail about different types of cell culture media along with its applications

Q. 3 Answer Any Seven from the following. **35 M**

1. What is humanization of antibody therapy. Give its advantages and applications with suitable example

2. Write in detail about cyclic AMP signalling pathway, and role of cyclic GMP

3. Elaborate on mitogen-activated protein kinase (MAPK) signalling

4. Write in detail about ELISA and enlist types elaborate on Sandwich ELISA

5. Give application of gene therapy in clinical practice with examples.

6. Define proteomics and write their applications in detail.

7. Elaborate on applications of monoclonal antibodies in clinical practice.

8. Write in details about gel electrophoresis and its applications.

9. Write in brief about Principles and applications of cell viability assays

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