

THE KAVERY ENGINEERING COLLEGE
(An Autonomous Institution)

B.E/B.TECH DEGREE END SEMESTER THEORY EXAMINATIONS, NOV /DEC 2024

Second Semester

Biomedical Engineering

BM3251 - Biosciences for Medical Engineering

Regulations - 2021

Duration : 3 Hrs

Maximum : 100 Marks

PART - A (ANSWER ALL QUESTIONS) (Marks 10*2=20)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
1.	List any two physiological buffers of living system.	RE	1	2
2.	Define pH and buffers.	RE	1	2
3.	Infer lipids.	UN	2	2
4.	What are nucleosides and nucleotides.	RE	2	2
5.	Compare the different features of necrosis and apoptosis.	AN	3	2
6.	Infer carcinogenesis.	UN	3	2
7.	State any four bleeding disorders.	UN	4	2
8.	Summarize shock.	UN	4	2
9.	List some bacterial diseases of human beings.	AP	5	2
10.	What is hypersensitivity classifying it.	RE	5	2

PART - B (ANSWER ALL QUESTIONS) (Marks 5*13 = 65)

<i>Q.No</i>	<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
11.	a Justify the role of water as a biological solvent and give the properties of water.	EV	1	13
	Or			
	b Derive the Handerson – Hasselbalch equation and list out its applications.	EV	1	13
12.	a Classify the carbohydrate and detail the properties of monosaccharides.	UN	2	13
	Or			
	b Explain Watson – Crick Model of DNA.	UN	2	13
13.	a Explain the cellular adaptations of growth, inflammations and repair process of fracture healing.	UN	3	13
	Or			
	b Explain the classification of benign and malignant tumours. Interpret the spread of tumours through autopsy and biopsy.	UN	3	13
14.	a i Explain edema and hyperemia with neat diagram.	UN	4	7
	ii Explain intravascular coagulation with neat diagram.	UN	4	6
	Or			
	b Illustrate with relevant diagram: (i) Leukaemias (ii) Lymphomas and (iii) Haemorrhage	UN	4	13

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| 15. | a | Classify the Scanning Electron Microscope (SEM) and Transmission Electron Microscope (TEM). | RE | 5 | 13 |
| | | Or | | | |
| | b | List out and discuss in detail about common bacterial, fungal and viral diseases of human beings. | RE | 5 | 13 |

*PART - C (Marks 1*15 = 15)*

<i>Q.No</i>		<i>Questions</i>	<i>BLT</i>	<i>CO</i>	<i>Marks</i>
16.	a	Illustrate the following immunological techniques: (i) Immune diffusion (ii) Immune electrophoresis (iii) RIA and ELISA	UN	5	15
		Or			
	b	Explain in detail about clinical application of electrolytes and radioisotopes with necessary diagrams.	UN	1	15