SHRI RAMSWAROOP MEMORIAL UNIVERSITY

End Semester Examination (2021-22)-Odd Semester

Diploma (BM) – III Year (V Sem)	
Course Name: Advanced Biomedical Instrumentation	Code: DBT5002
Time: 02 Hours	Max Marks: 60

University Roll No.															
(To be filled by the Student)															

Note: Please read instructions carefully:

a) The question paper has 03 sections and it is compulsory to attempt all sections.

b) All questions of Section A are compulsory; questions in Section B and C contain choice.

Section A: Very Short Answer Type Questions **Attempt all the questions.**		**BL**	**CLO**	**Marks (10)**
1.	Define acceptance angle.	BL1	CLO1	02
2.	Name the main considerations of laser which determine its properties.	BL1	CLO2	02
3.	What is the function of holographic grading?	BL1	CLO3	02
4.	What do you understand by clinical data representation? Name at least two codes.	BL1	CLO4	02
5.	Compare recombinant retroviruses and recombinant adenoviruses.	BL2	CLO4	02
Section B: Short Answer Type Questions **Attempt any 03 out of 06 questions.**		**BL**	**CLO**	**Marks (30)**
1.	Explain the main elements of a laser with the help of diagram.	BL2	CLO1	10
2.	Explain at least two gene therapy methods out of following- a. Direct injection of naked DNA b. Particle-mediated gene transfer c. Liposome-mediated gene delivery	BL2	CLO1	10
3.	Describe the different identifier standards in healthcare industry.	BL2	CLO4	10
4.	Discuss the virtual reality based surgical planning and surgical training.	BL2	CLO3	10
5.	Discuss the laser safety measures.	BL2	CLO4	10
6.	Explain the interaction and effects of UV-IR laser radiation on biologic tissues.	BL2	CLO1	10
Section C: Long Answer Type Questions **Attempt 01 out of 04 questions.**		**BL**	**CLO**	**Marks (20)**
1.	Explain two major applications of argon laser in detail.	BL5	CLO1	20
2.	What is virtual reality? Elaborate the virtual reality technology system and its supporting devices with the help of block diagram.	BL6	CLO3	20
3.	Discuss the general principle of optical sensing of evanescent wave spectroscopy and surface plasmon resonance technique. Elaborate instrumentation of optical sensor with the help of diagram of basic	BL6	CLO3	20

	building blocks.			
4.	Elaborate extra corporeal shock-wave therapy and its subsystems.	BL6	CLO2	20

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