

**VIT[®]****Vellore Institute of Technology**(Approved by the Government under section 3 of U.G. Act, 1956)**School of Bio Sciences and Technology****Fall Semester 2023-2024****Continuous Assessment Test – II****SLOT: A1 + TA1 & A2 + TA2****Programme Name & Branch: B.Tech. & Biotechnology****Course Name & code: Immunology & BBIT305L****Class Number (s): VL2023240100183/ VL2023240100184/VL2023240100186/****VL2023240100187/ VL2023240100188****Faculty Name (s): Dr. D. Sankar Ganesh/ Dr. P. Naveen Kumar/ Dr. G. Sunantha****Faculty ID: 19611/ 19624 / 19630****Exam Duration: 90 Min.****Maximum Marks: 50 Marks****General instruction(s):****Answer all the questions. Draw the diagrams/ flow charts, wherever applicable.**

Q.No.	Question	Max Marks
1.	In humans, the genes present in Chromosome 6 (p.21.3) are responsible for the activation of immune response by synthesizing important glycoproteins. Discuss in detail about the structure and organization of the above proteins.	10
2.	In germ-line DNA, the multigene families contain several coding sequences that are separated by non-coding regions. During B-cell maturation, these gene segments are rearranged and brought together to form specific functional molecules. Explain in detail about the genetic re-arrangement to form these molecules (with illustration).	10
3.	Justify the somatic variation and germ line theories (various mechanisms) in producing molecules that are involved in combat with diverse antigens.	10
4.	Describe the sequence of events in B cell activation by thymus-dependent mechanism along with the stages of cell cycle (with illustrations).	10
5.	A signalling cascade involving proteasomes, rough endoplasmic reticulum and chaperones activates T cells. Explain in detail the above cascade with illustrations.	10

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