Register Number:……..

KUMARAGURU
college of technology
character is life

B.TECH DEGREE EXAMINATIONS: NOV/DEC 2023

(Regulation 2018)

Fifth Semester

BIOTECHNOLOGY

U18BTE0016: Molecular Pathogenesis

COURSE OUTCOMES

CO1: Outline the principles of microbial pathogenesis, clinical importance of specific pathogens.

CO2: Acquire importance of Host defense mechanisms and pathogen adaptation against host defense.

CO3: Compare the molecular mechanisms involved in pathogenesis of diseases caused by E.coli, Vibrio, Shigella, Salmonella, malarial parasite and Influenza virus.

CO4: Evaluate the different host-pathogen interaction with respect to the pathological damage of pathogens.

CO5: Acquire knowledge about virulence and virulence factors in genomic approach.

CO6: Recognize the different diagnostic techniques like ELISA, RIA etc.

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-
PART A (10 x 2 = 20 Marks)
(Answer not more than 40 words)

1.	Illustrate the transmission mode of an infectious disease.	CO1	[K_2]
2.	Differentiate the current and past infection based on target identification in the patient specimen.	CO1	[K_2]
3.	Specify any two genes of virulence pandora box.	CO2	[K_2]
4.	Classify the three lines of host defenses.	CO2	[K_2]
5.	Abbreviate: IPEC and ExPEC.	CO3	[K_2]
6.	Classify the Salmonella based serotypes.	CO3	[K_3]
7.	List any two types of cytopathic effect of virus in mammalian cell system.	CO4	[K_2]
8.	Distinguish the genetic screening and selection processes.	CO4	[K_2]
9.	Draw the precipitation pattern for double immuno diffusion techniques.	CO5	[K_3]
10.	Abbreviate: TMB and RIA.	CO6	[K_2]

Answer any FIVE Questions:-
PART B (5 x 16 = 80 Marks)
(Answer not more than 400 words)

11.	a)	Describe the healthcare-related infectious diseases and its preventive measures.	8	CO1	[K_2]
	b)	Recall the classification of infection with specific examples.	8	CO1	[K_2]
12.	a)	Suggest few examples to distinguish the mechanical and chemical defenses that are adopted in the first line defense processes.	8	CO2	[K_2]
	b)	"Both humoral and cell mediated immunity are cooperative and integrative to activate the host immunity process" The statement with a suitable illustration.	8	CO2	[K_4]
13.	a)	Provide your insights on the molecular mechanism of Vibrio cholerae on its spathogenesis	8	CO3	[K_2]
	b)	Illustrate the plasmodium life cycle and the H1N1 intercellular stages.	8	CO3	[K_2]
14.	a)	Suggest a procedure to study the adherence property of pathogen on the mammalian host cells.	8	CO4	[K_3]
	b)	How SARS induce the pathological changes in the Vero E6 cell line? Demonstrate the procedure with detailed notes.	8	CO4	[K_2]
15.	a)	Recommend any two qualitative experimental studies with detailed procedures to confirm the presence of virulence factors in the patient specimens.	8	CO5	[K_3]
	b)	How will you determine the antigen concentration by single radial immuno diffusion techniques?	8	CO5	[K_2]
16.	a)	Compare and contrast any two ELISA types with salient features.	8	CO6	[K_2]
	b)	Give the detailed notes on Rosalin Yellow and their team for the development of Radioimmuno assay techniques.	8	CO6	[K_2]

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