

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
TEST-3 EXAMINATION- JUNE -2016
B.Tech VI Semester

COURSE CODE: 10B11BT615

MAX. MARKS: 35

COURSE NAME: Diagnostics and Vaccine Manufacture Technologies

COURSE CREDITS: 4

MAX. TIME: 2 HRS

Note: All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means.

Q1. Give Reason for the following:

[1 X 5 = 5]

- a. Development of a DNA vaccine is preferred for Chagas disease.
- b. Only Barium is used in swallow diagnostics test for Oesophageal cancer.
- c. Booster doses are not recommended for Meningococcal Vaccine.
- d. Vaccines against cytomegalovirus are difficult to develop.
- e. E-test is preferred for antimicrobial susceptibility over disk diffusion for critical illness cases.

Q2. Describe life cycle stages of a malarial parasite which can be targeted for vaccine development strategies against the parasite and significance of each stage. [5]

Q3. Explain different vaccine types available for Rabies. Why are pre- and post exposure both vaccines required for Rabies? [5]

Q4. Discuss important theories and concepts responsible for variable efficacy of BCG vaccine. Why is it included in vaccination regimen of India but not USA? [5]

Q5. Antimicrobial susceptibility of *Salmonella* to a drug was studied. Determine the MIC and MBC of the drug, and indicate whether it is bactericidal or bacteriostatic in action. Draw a graph showing growth curves of *Salmonella* after addition of the drug. (All calculations should be done in fair copy only). [1+2+1+1=5]

	1	2	3	4	5	6	7	8	9	10	11	12
Growth	+	-	-	-	-	+	+	+	+	+	+	+
Dilution	-8	-2	-2	-4	-6	-7	-8	NA	NA	NA	NA	NA
No. of Colonies	10	12	14	16	18	20	∞	NA	NA	NA	NA	NA

Column 1 represents no drug control. The initial concentration of the drug in column 2 was 600ug/mL of the culture, and the drug was diluted 2-fold from column 2 to column 12. The micro-titer plate was observed after 16 hours for visible growth and CFU count was done using 100μL of culture samples from wells.

Q6. Write Short Notes on:

[2.5 X 4 =10]

- a. Rickettsial Subunit Vaccines.
- b. First, Second and Third generation Vaccines for Visceral Leishmaniasis
- c. Autologous tumor cell vaccines.
- d. Vaccines available for Human Papilloma Virus (HPV)