Dr. Rahul Srivastava

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT
MAKEUP EXAMINATION- APRIL -2018
B.Tech VI Semester

COURSE CODE: 10B11BT615 MAX. MARKS: 25
COURSE NAME: DIAGNOSTICS & VACCINE MANUFACTURE TECHNOLOGIES
COURSE CREDITS: 04 MAX. TIME: 1 HR 30Mins

Note: *All questions are compulsory. Carrying of mobile phone during examinations will be treated as case of unfair means. Answer all subparts of a question at one place.*

Q1. With respect to Sandwich ELISA answer the following: **[1 X 5 =5]**

i. Role of blocking buffer
ii. Use of PBST as washing agent
iii. Advantage of tagging enzyme label to secondary antibody
iv. Advantage of capture antibody for antigen detection
v. Advantage of using Anti-IgG as secondary antibody for antigen detection

Q2. Four human blood samples were collected from patients for investigation. A set of PCR reactions were performed for the test samples; taking suitable positive and negative controls. The PCR products thus obtained were run on agarose gel. Provide suitable explanation for the following observations. In each case point out if the test would be valid or not? **[1.5 X 5 = 7.5]**

a. DNA ladder loaded was visible. Positive control shows no band/amplification, but negative control and test samples show bands.

b. DNA ladder loaded was visible. Negative control, test samples and positive control show no band/amplification.

c. DNA ladder loaded was not visible. Negative control, positive control and test samples show no band/amplification.

d. DNA ladder loaded was visible. Negative control, Positive control and test samples - all showed bands of amplified product.

e. DNA ladder loaded was visible. Negative control shows no band/amplification, Positive control and test samples - showed bands of amplified product.

Q3. What is Multiplex PCR? Describe the technique with Diagrams and Examples. List important parameters which should be considered to design a multiplex PCR based diagnostic method. **[4 .5]**

Q4. Differentiate between the following: **[2 X 4 = 8]**

i. Direct and Indirect Immunofluorescence.
ii. Direct and Indirect Agglutination.