Dr. Rahul Srivastava

JAYPEE UNIVERSITY OF INFORMATION TECHNOLOGY, WAKNAGHAT

TEST-2 EXAMINATION- APRIL -2018

B.Tech VI Semester

COURSE CODE: 10B11BT615 MAX. MARKS: 25

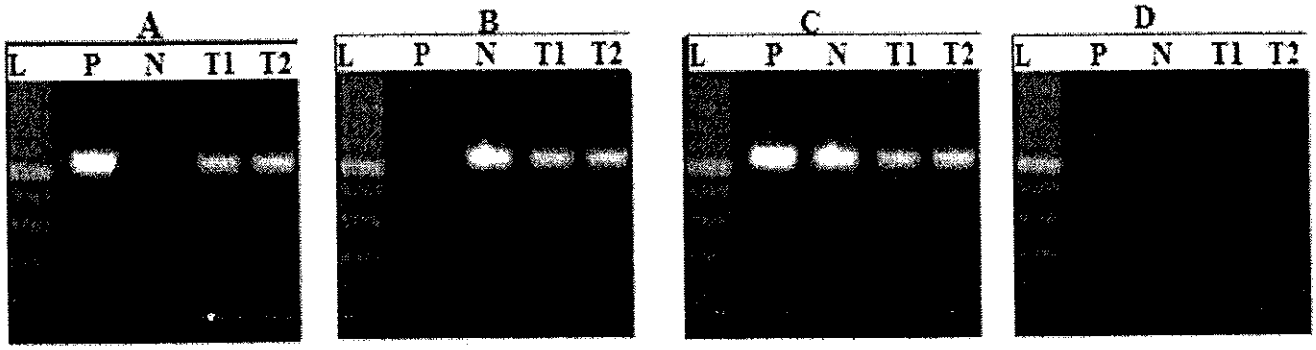
COURSE NAME: DIAGNOSTICS & VACCINE MANUFACTURE TECHNOLOGIES

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. Tissue samples containing virus were collected from two patients for diagnosis of an infection. Genomic DNA of the virus was isolated and used to amplify presence of a unique sequence, for confirming the presence of virus. PCR reactions were performed FOUR TIMES (A, B, C and D) with suitable positive and negative controls. The amplified Test Samples (T1 & T2) and controls in each experiment (A, B, C and D) were run on agarose gel with DNA Ladder.

Provide suitable explanation for each PCR gel (A, B, C and D). In each case point out if the test would be valid or not? **[1.5 X 4 = 6]**



L = 100bp DNA Ladder; P = Positive Control; N = Negative Control; T1 & T2 – Patient Test Samples

Q2. Give Reason in **support or against** the statement: **[2 X 4 =8]**

i. Use of capture antibody in Sandwich ELISA may decrease detection sensitivity of the antigen.

ii. Indirect ELISA is more sensitive for detection of an antigen in comparison to direct ELISA.

iii. Washing steps are not essential for an ELISA protocol, and leads to time wastage.

iv. Monoclonal antibodies are commonly used as capture antibodies in Sandwich ELISA.

Q3. Describe the following with Diagrams and Examples: **[4 X 2 = 8]**

i. Nested and Semi-Nested PCR.

ii. Direct and Indirect Immunofluorescence.

Q4. Differentiate between Direct and Indirect Agglutination, highlighting their specific applications. **[3]**