

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scheme of Valuation/Answer Key**  (Scheme of evaluation (marks in brackets) and answers of problems/key) | | | | | |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  **FOURTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2019** | | | | | |
| **Course Code: MA204** | | | | | |
| **Course Name: PROBABILITY, RANDOM PROCESSES AND NUMERICAL METHODS (AE, EC)** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
| ***Normal distribution table is allowed in the examination hall.*** | | | | | |
| **PART A** | | | | | |
| ***Answer any two questions*** | | | | | |
| 1 | a) | ........(1) ........(1)  ......... | | | (7) |
|  | b) | , (1)  .........(1+1)  Number of packets with atleast two defectives = 264 ....(1)  .....(1)  Number of packets with 2 defectives = 184 ...(1)  .......(1)  Number of packets with atmost two defectives = 920 .....(1) | | | (8) |
| 2 | a) | .........(3)  (i) P(X.........(2)  (ii) ......(2) | | | (7) |
|  | b) | .......(1) .......(1)  .........(1+1)  .......(1+1)  .....(1+1) | | | (8) |
| 3 | a) | Mean = .......(1) .....(1)  ........(1)  Table (4)   |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  | 0.1866 | 0.3110 | 0.2764 | 0.1382 | 0.0369 | 0.0041 | |  |  |  |  |  |  |  |  | | | | (7) |
|  | b) | .......(1+2)  .......(1+ 2)  Solving ........(1+1) | | | (8) |
| **PART B** | | | | | |
| ***Answer any two questions*** | | | | | |
| 4 | a) | .......(2)  ......(1) OR  ........(2)  .....(1+1) | | | (7) |
|  | b) | ........(1) ......(1)  .....(1+1)  ..........(1+1)  ..........(1)  are dependent ........(1) | | | (8) |
| 5 | a) | , constant ..............(2)  ..................(2)  ..........(1)  , function of time difference.......(2) | | | (7) |
|  | b) | ..........(2)  ........(1+2)  Substitution ................... (1) = ................(2) | | | (8) |
| 6 | a) | |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |   ........(2)   |  |  |  |  | | --- | --- | --- | --- | |  |  |  |  | |  |  |  |  |   .......(2)   |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |  |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |  |  |  |  | | --- | --- | --- | |  |  |  | |  |  |  |   ..............................(1+1+1)  If a student has not attended question 6 (a) bust has attended (6)b and found correct, then give 15 marks to 6(b) | | | 7 |
|  | b) | .......(2) or (2+2)  ........(2) or (5)  ..........(2+2) or (3+3) | | | 8 or (15) |
| **PART C** | | | | | |
| ***Answer any two questions*** | | | | | |
| 7 | a) | For (iii) and (iv) we have to use initial probability which is given wrong.    **OR**  If a student use the initial probability given in the question to solve (iii) and (iv) marks as directed below:  P{  = ........(3) | | | (10) |
|  | b) | ........(1) ........(1)  .......(1) ...........(2) | | | (5) |
|  | c) | ........(1)  ........................(2)  .........(2) | | | (5) |
| 8 | a) | |  |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | --- | |  |  |  |  |  |  |  |  | |  |  |  |  |  |  |  |  |   Table values ......(3)  ............(2)  .....(2) | | | (7) |
|  | b) | ..............(1)  (2)32.913........ (2) | | | (7) |
|  | c) | .1 .....(1)  ........(1)  .......(1)  ......(1)  ..........(1)  ......................(1) | | | (6) |
| 9 | a) | .............(3)  (i) .........(1+1)  (ii) ..........(1+1+1)  (iii) .......(1)  P(buying B in the long run) = .............(1) | | | (10) |
|  | b) | ...........(2), substitution ......(2) .....(1) | | | (5) |
|  | c) | , root lies between 3 and 4 ..........(1) .......(1)  ........(3) | | | (5) |

**\*\*\* For any alternate method (if method is not specified) and if the answer is correct, give full marks.**