|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Scheme of Valuation/Answer Key**  (Scheme of evaluation (marks in brackets) and answers of problems/key) | | | | | |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**  FIFTH SEMESTER B.TECH (S) DEGREE EXAMINATION, MAY 2019 | | | | | |
| **Course Code: EE307** | | | | | |
| **Course Name: SIGNAL AND SYSTEMS** | | | | | |
| Max. Marks: 100 | | |  | Duration: 3 Hours | |
| **PART A** | | | | | |
|  |  | ***Answer all questions, each carries5 marks.*** | | | Marks |
| 1 |  | Explanation with example – 5 marks | | | (5) |
| 2 |  | – 4marks  ROC: – 1mark | | | (5) |
| 3 |  | Statement – 1 mark  Proof – 4 marks | | | (5) |
| 4 |  | Explanation with block diagram – 5 marks | | | (5) |
| 5 |  | – 3 marks ROC: |z| > |a| - 1 mark | | | (5) |
| 6 |  | Statement – 1 mark  Proof – 4 marks | | | (5) |
| 7 |  | Converting to Fourier transform – 3 marks  – 2 marks | | | (5) |
| 8 |  | Any 3 types of nonlinearities – 5 marks | | | (5) |
| **PART B** | | | | | |
| ***Answer any twofull questions, each carries10 marks.*** | | | | | |
| 9 |  | Any 5 types of signals with example – 10 marks | | | (10) |
| 10 |  | Conversion to laplace transform and partial fraction – 4 marks  – 6 marks | | | (10) |
| 11 |  | Check for causality, linearity and time invariance – 6 marks  System is non causal, linear and time variant- 4 marks | | | (10) |
| **PART C** | | | | | |
| ***Answer any twofull questions, each carries10 marks.*** | | | | | |
| 12 |  | T = – 1 mark  Formula – 2 marks  Calculation of Fourier coefficients – 5 marks  Final expression – 2 marks | | | (10) |
| 13 |  | 1. Convolution sum – 2marks   – 4 marks   1. Equation -1 mark (4)   Transform – 3mark | | | (6) |
| 14 |  | Any 5 properties with proof – 10 marks | | | (10) |
| **PART D** | | | | | |
| ***Answer any twofull questions, each carries 10 marks.*** | | | | | |
| 15 |  | – 7marks  For n<0, x(n) =0 – 3 marks | | | (10) |
| 16 | a) | Formula – 1 mark  DTFT is – 4 marks | | | (5) |
|  | b) | Any 3 properties – 5 marks | | | (5) |
| 17 | a) | Initial value = 0 – 2.5 marks  Final value = ½ - 2.5 marks | | | (5) |
|  | b) | Properties of DTFT – 5 marks | | | (5) |
| \*\*\*\* | | | | | |