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| **Scheme of Valuation/Answer Key**(Scheme of evaluation (marks in brackets) and answers of problems/key) |
| **APJ ABDUL KALAM TECHNOLOGICAL UNIVERSITY**THIRD SEMESTER B.TECH DEGREE EXAMINATION, DECEMBER 2018 |
| **Course Code: EC205** |
| **Course Name: ELECTRONIC CIRCUITS (EC,AE)** |
| Max. Marks: 100 |  | Duration: 3 Hours |
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| **PART A**  |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | Marks |
| 1 | a) | Definition-2marks, derivation of general expression-2mrks, emitter stabilized biasing circuit-1mark, stability factor derivation – 3marks | (8)  |
|  | b) | Low frequency hybrid π model- 2marks, derivation of voltage gain- 2marks, derivation of input impedance -2marks, derivation of output impedance -1mark | (7) |
| 2 | a) | Circuit diagram-1marks, derivation-2marks, design-2marks | (5) |
|  | b) | Plot waveform -3marks | (3) |
|  | c) | Calculation of Vth- 1mark, calculation of Rth- 1mark, calculation of IB -1marks, calculation of IC -1mark, calculation of VCE-1mark, calculation of SICO-2marks | (7) |
| 3 | a) | Calculation of Vth- 0.5mark, calculation of Rth- 0.5mark, calculation of IB -0.5marks, calculation of IC -0.5mark, calculation of gm-0.5mark, calculation of rπ-0.5, calculation of ro -0.5mark, calculation of Rin- 2marks, calculation of Ro-1.5mark, calculation of Av-1mark | (8) |
|  | b) | Circuit diagram- 1marks, equivalent circuit- 2marks, derivation of voltage gain- 2marks, derivation of input impedance -1marks, derivation of output impedance -1mark | (7) |
| **PART B**  |
| ***Answer any two full questions, each carries 15 marks.*** |
| 4 | a) | Circuit diagram- 2marks, explanation-5marks | (7) |
|  | b) | Schematic -2marks, explanation-2marks, input impedance- 2marks, output impedance-2marks | (8) |
| 5 | a) | Circuit diagram-1mark, equivalent circuit-2marks, derivation-5marks | (8) |
|  | b) | Circuit diagram-2marks, equivalent circuit-1mark, derivation-4marks | (7) |
| 6 | a) | Circuit diagram-1marks, equivalent circuit-2mark, derivation-5marks | (8) |
|  | b) | Circuit diagram- 2marks, explanation-5marks | (7) |
| **PART C**  |
| ***Answer any two full questions, each carries20 marks.*** |
| 7 | a) | Circuit diagram-2marks, waveform-2marks, explanation-3marks, derivation-3marks | (10) |
|  | b) | Circuit diagram -3marks, explanation- 7marks | (10) |
| 8 | a) | Circuit diagram-2marks, explanation-2marks, derivation-3marks | (7) |
|  | b) | Determination of Vds= 4 Mark, Region of working justification= 3 Marks  | (10) |
|  | c) | Equation -1mark, calculation-2marks | (3) |
| 9 | a) | Circuit diagram-2marks, waveforms-2marks, explanation-3mrks | (7) |
|  | b) | Definition-2 Mark, Elimination- 1 Mark | (3) |
|  | c) | Circuit diagram- 2marks, equivalent circuit-2marks, derivation-6marks | (10) |
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