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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**FOURTH SEMESTER B.TECH DEGREE EXAMINATION, APRIL 2019 |
| **Course Code: EC204** |
| **Course Name: ANALOG INTEGRATED CIRCUITS (AE, EC)** |
| Max. Marks: 100 |  | Duration: 3 Hours |
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| **PART A**  |
|  |  | ***Answer any two full questions, each carries 15 marks.*** | Marks |
| 1 | a) | 2.5 marks for each derivation x 4 | (10)  |
|  | b) | 2 marks for definition + 1 mark for causes + 2 marks for derivation | (5) |
| 2 | a) | $\frac{Rf}{R1}=0.2, \frac{Rf}{R2}=2, \frac{Rf}{R3}=20$; Assume a value for Rf. Then find R1, R2 and R36 marks for calculation and 1 mark for diagram. | (7) |
|  | b) | 8 marks for derivation of output voltage. | (8) |
| 3 | a) | 4 marks for equivalent circuit and 4 marks for voltage transfer characteristics (2 marks for voltage transfer curve and 2 marks for explanation.) | (8) |
|  | b) | 3.5 marks+3.5 marks | (7) |
| **PART B**  |
| ***Answer any two full questions, each carries 15 marks.*** |
| 4 | a) | 2 marks for main circuit diagram + 2 mark for waveforms+ 5 marks for working explanation | (9 ) |
|  | b) | 4 marks for derivation+2 marks for explanation | ( 6) |
| 5 | a) | 2 marks for circuit diagram+2 marks for waveforms+1 mark for equation+3 mark for explanation+2 mark for hysteresis. | (10) |
|  | b) | 2 marks for circuit diagram+3 marks for explanation | (5) |
| 6 | a) | 2 marks for circuit diagram+ 6 marks for design  | (8) |
|  | b) | 2 marks for circuit diagram+5 marks for design | (7) |
| **PART C**  |
| ***Answer any two full questions, each carries 20 marks.*** |
| 7 | a) |  2 marks for block diagram+4 marks for explanation+2marks for capture range and 2 marks for lock range | (10)  |
|  | b) | 3 marks for internal diagram of 555+3 marks for explanation+ 2 mark for waveforms+2 marks for derivation. | (10)  |
| 8 | a) |  3 marks for diagram+7 marks for explanation | (10) |
|  | b) | 3 marks for diagram +7 marks for explanation | (10) |
| 9 | a) | 2 marks for diagram+3 marks for explanation | (5) |
|  | b) | 3 marks for diagram +3 marks for explanation | (6) |
|  | c) | 3 marks for diagram+3 marks for explanation | (6) |
|  | d) | 2 marks for diagram+1 mark for explanation | (3) |
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