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10CS32

Third Semester B.E. Degree Examination, Dec.2018/Jan.2019
Electronic Circuits

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions, selecting at least TWO full questions from each part.

PART - A

- 1 a. For a fixed biased circuit draw the circuit diagram, its DC equivalent circuit and load line analysis. What are its advantages and disadvantages? (10 Marks)
- b. Explain with figure for transistor used as a switch. (04 Marks)
- c. For the fixed-bias circuit of Fig.Q.1(c), determine the operating point (given that transistor gain $\beta = 100$, $V_{BE} = 0.7V$). Also draw the load line for the circuit. (06 Marks)

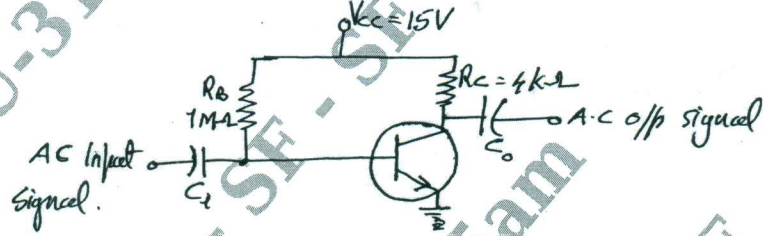


Fig.Q.1(c)

- 2 a. Name and explain the differences between JFETs and MOSFETs. (05 Marks)
- b. List and explain some of the common applications of FET's. (06 Marks)
- c. Draw the basic inverter circuit using CMOS configuration. Also explain the operation of CMOS inverter with the help of simplified circuit diagram. (09 Marks)
- 3 a. Name and explain characteristic parameters used to characterize the performance of photosensors. (08 Marks)
- b. List and brief the LED parameters. (05 Marks)
- c. Draw the cross sectional view of a CRT display and brief about its advantages and disadvantages. (07 Marks)
- 4 a. Draw the frequency response of an RC-coupled amplifier and a DC-coupled amplifier. Also explain the main differences between the response of the two amplifiers. (08 Marks)
- b. Draw the following:
 - i) Circuit symbol of common-emitter transistor configuration.
 - ii) h-parameter model for C-E transistor configuration.
 - iii) Values of the parameters: h_{ie} , h_{fe} , h_{re} , h_{oe} . (07 Marks)
- c. Explain about cascading amplifiers. (05 Marks)

PART - B

- 5 a. What are the classifications of large signal amplifiers with necessary figures? (08 Marks)
- b. What are the advantages of negative feedback? (06 Marks)
- c. List the four feedback topologies. Draw the schematic arrangement for voltage series feedback and find for gain and input resistance. (06 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.



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- 6 a. Explain brief about: RC; LC and crystal oscillators. (06 Marks)
- b. With figure explain about VCO with its applications. (06 Marks)
- c. Explain with figure the working of transistor based Bistable Multivibrator showing the timing waveforms. (08 Marks)

- 7 a. List and explain the regulated power supply parameters. (04 Marks)
- b. With necessary diagram and relevant waveforms explain about buck regulator. (10 Marks)
- c. Explain with figure three-terminal switching regulator. (06 Marks)

- 8 a. List and explain performance parameters of an OP-AMP. (10 Marks)
- b. With figure and relevant waveform explain for relaxation oscillator using OP-AMP. (10 Marks)

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