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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)

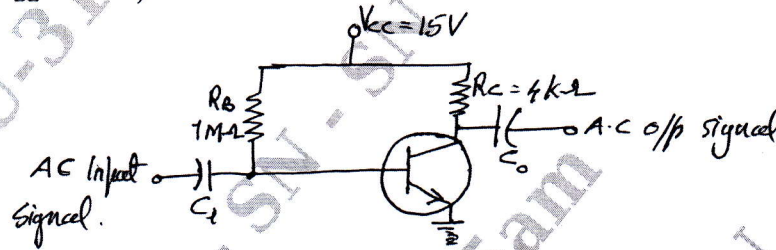


Fig.Q.1(c)

- 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)

- 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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