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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)**

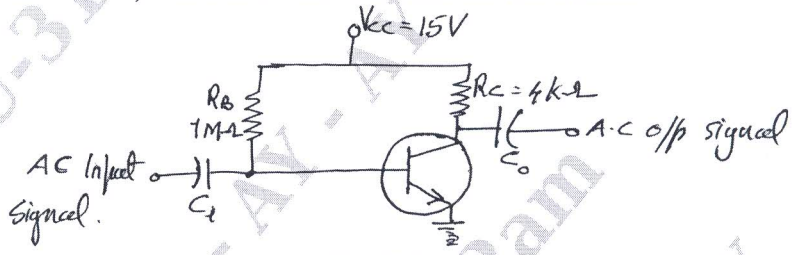

Fig.Q.1(c)

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: hie, hfe, hre, hoe. **(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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