



JAIN COLLEGE

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Bangalore - 560098

SUBJECT: Electronics

**II PUC
MOCK PAPER I (2018-19)**

Total Marks: 70

PART- A

I. ANSWER ALL THE QUESTIONS:

01X 10=10

1. Write the relation between I_{CEO} and I_{CBO} .
2. What is a comparator?
3. What is resting frequency?
4. Define frequency deviation.
5. Which layer is also called drift layer in power diode?
6. What is a counter?
7. A four bit synchronous counter is applied with clock frequency of 16 kHz. What is the frequency?
8. How many interrupt source are there in 8051 microcontroller?
9. What is the size of an integer in 'C' Programming.
10. Write any one advantages of wi-fi.

PART- B

II ANSWER ANY FIVE QUESTIONS

05 X 2=10

11. What is pinch-off voltage? What is the value of drain current at pinch-off?
12. What is the necessity of cascading?
13. Draw the block diagram of voltage shunt and current series negative feedback.
14. Draw the circuit diagram bi-stable multi-vibrator.
15. Draw are the advantages of SSB system over conventional DSB?
16. What are the different parts of memory of 8051?
17. Write the syntax for if else statement.
18. What is ISP? Mention its role in complete networking.

PART- C

III ANSWER ANY FIVE QUESTIONS

05 X 3=15

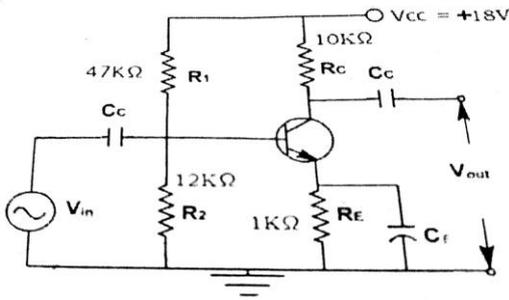
19. Write a note on selection of Q-point.
20. Compare input, output and impedance characteristics of 4 types of feedback connections.
21. What is line of sight? Differentiate Radio horizon and Optical horizon.
22. Draw the circuit and output waveform of DC to AC inverter.
23. Determine V_{DC} & I_{DC} of SCR half wave rectifier. Given firing angle is 90° and peak voltage of AC input to the rectifiers is 325.2V and a rheostat load of 25Ω is connected.
24. Draw the truth table and timing diagram and logic diagram of PISO register.
25. Explain structure of assembly language.
26. List the additional features of 3G & 4G cell phone system

PART - D

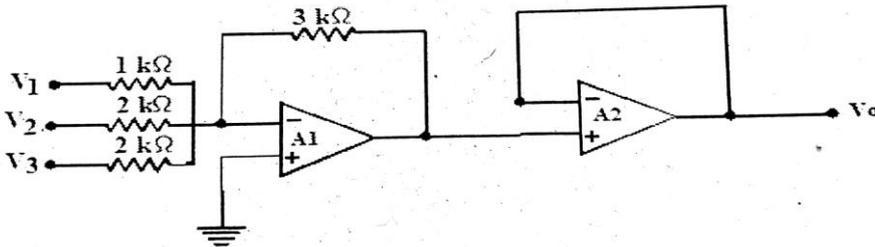
IV ANSWER ANY THREE QUESTIONS

03 X 05=15

27. CE amplifier circuit using germanium transistor is shown in figure given below. Calculate i) V_2 (voltage drop across R_2). ii) I_E iii) r_e^I iv) A_V , v) A_i . given $r_e^I = 52\text{mV}/I_E$ and $\beta=150$.

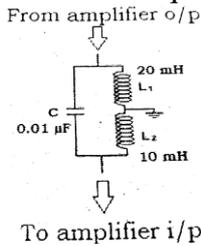


28. Calculate the output voltage V_o for the circuit shown below.



$V_1=1.2\text{V}$, $V_2=0.6\text{V}$, and $V_3=-1.1\text{V}$.

29. Determine the frequency and feedback factor of the circuit shown below.



30. An FM signal with single tone modulation has a frequency deviation of 12kHz and a bandwidth of 30kHz. Find the frequency of modulating signal, modulation index m_f and carrier swing.

31. Simplify $Y = f\{A,B,C\} = \sum m(0,1,2,4,5,8,9,10,12,13)$ and draw the logic circuit using NAND gates.

PART - E

V ANSWER ANY FOUR QUESTIONS

04 X 05= 20

- 32. Derive the explain for current gain, voltage gain, input impedance, output impedance and power gain for CE amplifier with r_e^I model.
- 33. What is an OP-AMP? With block diagram explain various stages of OP-AMP.
- 34. Derive an expression for Instantaneous voltage of amplitude modulated wave.
- 35. Draw the pin diagram of IC 7400. Realize NOT, AND, OR and XOR gates using NAND gates.
- 36. In pin diagram of 8051. Name I/O pins of all the 4 ports.
- 37. Explain the features of C programming language.
