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Reg. No.:			Managar	
Keg No.	1954		Name:	

FIRST SEMESTER B.TECH DEGREE EXAMINATION, JANUARY 2016

Course Code: BE101-04

Course Name: INTRODUCTION TO ELECTRONICS ENGINEERING

Max. Marks: 100

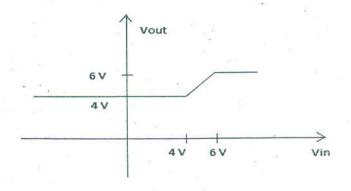
Duration: 3 Hours

PART A

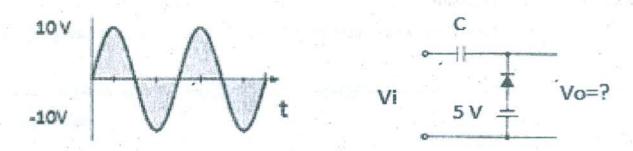
Answer ALL questions. Each question carries 2 marks

- • 1. Color band sequence on a resistor is Yellow, Violet, Silver and Red. What is its resistance value?
- • 2. What is the working principle of transformer?
 - §3. A number 104 is written on the body of a ceramic capacitor. What is the value of capacitance?
 - 4. Draw piecewise linear model of diode.
- ••5. Differentiate between Zener and avalanche breakdown.
 - A Silicon diode has reverse saturation current of 2.5μA at 300K. Find forward voltage for a forward current of 10Ma.
 - *7. Discuss the role of bypass capacitor in a single stage RC coupled amplifier?
- **8**. The widely used voltage amplifier configuration is CE, mention the reason?
- 10. Draw the equivalent circuit of a UJT.
 - •11. Write 4 advantages of FET over BJT.
 - al 2. How FET functions as voltage variable resistor?
 - •13. Why is the ripple factor of HWR higher than that of FWR?
 - 14. Design a silicon diode clipper for transfer characteristics in figure below?

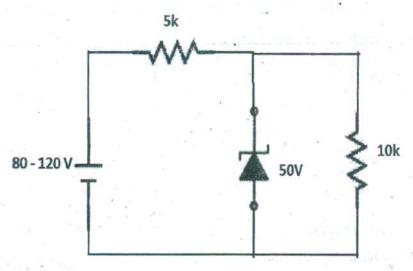




∆ 15. Assuming drop across diode is 0.6V, find output voltage V₀?



16. Find the maximum and minimum values of Zener diode current.



- \$ 17. A CRO is set to a time base of 0.1ms/div with a 2V/div amplitude. Sketch the display of a pulse signal waveform with a frequency 1kHz and amplitude 8V peak.
- • 18. What is precision and resolution of measuring instruments?
- 19. Compare an analog multimeter with a digital multimeter.
- ≥ •20. How testing of a diode is carried out?

PART B

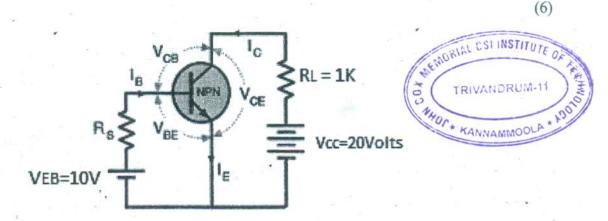
Answer any 4 complete questions each having 10 marks

• °21. Differentiate the capacitors based on the types of dielectric used and explain their construction.

(10)

- • 22. A) Explain the constructional details of carbon composition resistors? (5)
 - •B) Explain the formation of a potential barrier in a p-n junction and show the polarity of the Barrier potential. (5)
 - 23. A) Explain the working of an RC coupled amplifier with a neat circuit diagram. (6)
 - B) Explain the frequency response curve. (4)

• 24. • A)With reference to the following circuit, draw the load line and mark the Q point of a Silicon transistor operating in CE mode based on the following data (β = 80, Rs= 47kΩ, RL= 1kΩ,neglect I_{CBO})



- B) Sketch the forward characteristics of a SCR. Explain the importance of Holding current in a SCR. (4)
- With a neat diagram draw structure of n channel E-MOSFET and explain different regions of operation.

Answer any 2 complete questions each having 10 marks

- ••26. •A)Draw the circuit of a bridge rectifier and explain its working. (5)
 - •B) Derive the expressions for V_{rms}, V_{dc}, Ripple factor, Rectification Efficiency, Peak Inverse Voltage. (5)
- • 27. A) With the help of suitable block diagram, discuss the working principle of the electronic device which is used in laboratories for generating the various standard waveforms. (5)
 - (5) Draw the block diagram of DC power supply and list out the functions of each block.
 - 28. With neat schematic diagram, explain the working of a CRO. List its applications. (10)