



SE-6247

B. E. - II (I.T.) (Sem. III) Examination
April / May - 2011
Electronics - I

Time : 3 Hours]

[Total Marks : 100

Instruction :

(1)

नीचे दृष्टावेक निशानीवाणी विगतो उत्तरवही पर अवश्य कभवी. Fillup strictly the details of signs on your answer book.	Seat No. :
Name of the Examination :	<input type="text"/>
<input type="text" value="B. E. - 2 (I.T.) (SEM. 3)"/>	<input type="text"/>
Name of the Subject :	<input type="text"/>
<input type="text" value="ELECTRONICS - 1"/>	<input type="text"/>
Subject Code No. : <input type="text" value="6"/> <input type="text" value="2"/> <input type="text" value="4"/> <input type="text" value="7"/>	Section No. (1, 2,.....) : <input type="text" value="1&2"/>
Student's Signature	

- (2) Assume suitable data wherever necessary.
- (3) Attempt all questions.
- (4) Numbers to the right indicates full marks.
- (5) Programmable calculators are not allowed.

SECTION - I

- 1 (a) Answer the following questions : 10
 - (1) Give properties of semiconductor material.
 - (2) What is PIV ?
 - (3) What is Valance Band.
 - (4) List properties of Zener Diode.
 - (5) What is doping ?
 - (b) Explain P-type semiconductor. 5
 - (c) Explain characteristics of Zener Diode. 5
 - 2 (a) Explain full wave bridge rectifier. 8
 - (b) Explain infinite coupling capacitor. 8
- OR**
- 2 (a) Explain Diode capacitance in detail. 8
 - (b) Explain center tapped full wave rectifier. 8
 - 3 Attempt any two : 14
 - (1) Explain PI filter
 - (2) Explain current flow mechanism in PNP transistor
 - (3) Explain N type semiconductor.

SECTION - II

- 4 (a) Attempt the following questions : any ten 10
- (1) The smaller stability factor, the _____ will be the thermal stability of the circuit.
 - (a) worse
 - (b) better
 - (2) _____ has an important effect on shifting of the operating point.
 - (a) voltage
 - (b) temperature
 - (c) current
 - (3) DC load line of a transistor is drawn between two points called _____ point and _____ point.
 - (4) The stability factor of a transistor circuit is given by _____.
 - (a) $S = \frac{dI_{CO}}{dI_C}$
 - (b) $S = \frac{dI_C}{dI_{CO}}$
 - (c) $S = \frac{dI_C}{dI_E}$
 - (5) The point of intersection of dc and ac load line is called _____ point.
 - (6) The value of stability factor should be _____.
 - (a) As high as possible
 - (b) As low as possible
 - (c) ∞
 - (7) The collector to base bias circuit is an improvement over the _____ circuit.
 - (a) Fixed bias
 - (b) Voltage divider bias
 - (8) Oscillator employs _____ feedback.
 - (a) Positive
 - (b) Negative

- (9) _____ ICs are the most commonly used.
- Monolithic
 - Thin film
 - Hybrid
- (10) The phase shift oscillator _____ transform.
- requires
 - does not require
- (11) The most popular form of IC package is _____.
- DIL
 - Flat pack
 - TO-5
- (12) Give the IC classification.

- (b) (1) For the circuit shown in fig. 1. determine the Q point values of I_C and V_{CE} . Assume the transistor to be a Si transistor and $\beta_{dc} = 100$. 6

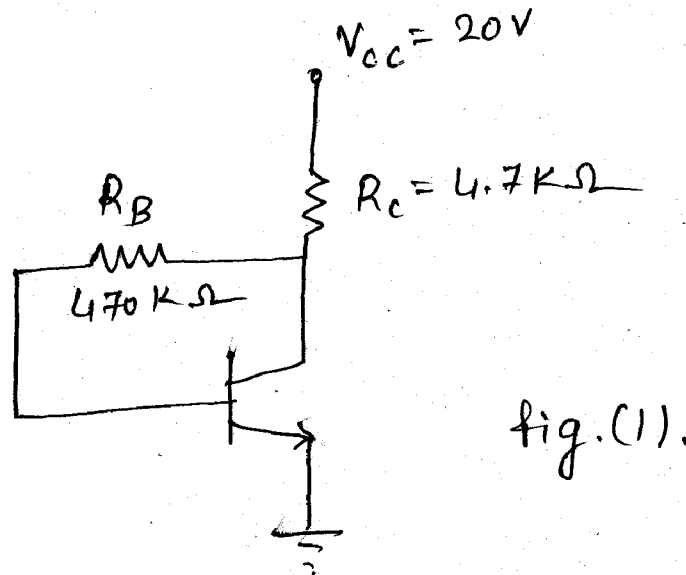


Fig. 1

- (2) Explain the need of biasing in transistor amplifier. Draw the circuit of fixed bias. 4

- 5 (a) What is an integrated circuit ? Discuss the relative advantages and disadvantages of ICs over discrete assembly. 5
- (b) Explain Wein Bridge Oscillator. 5
- OR**
- (b) Explain Phase Shift Oscillator. 5
- (c) Compare various methods of transistor biasing. 5
- 6 Write short notes : (any three) 15
- (1) Collpitt's oscillator
- (2) Voltage divider biasing
- (3) Fabrication of monolithic IC
- (4) Advantages and disadvantages of collector to base bias
- (5) Hurtlely oscillator.
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