



RAN - 1903000203020091



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**S. Y. B. Sc. (Electronics) (Sem. - III) Examination**

**March - 2023**

**Electronics : Paper - III**

**Electronics Circuits and Applications**

**Time: 1 Hour ]**

**[ Total Marks: 50**

**સૂચના : / Instructions**

(1)

નીચે દર્શાવેલ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.  
**Fill up strictly the details of signs on your answer book**

Name of the Examination:

**S. Y. B. Sc. (Electronics) (Sem. - III)**

Name of the Subject :

**Electronics : Paper - III Electronics Circuits and Applications**

Subject Code No.: **1903000203020091**

Seat No.:

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Student's Signature

- (2) Symbols used have their usual meaning.
- (3) Each MCQ Q. 1 to Q. 16 carries one mark.
- (4) Each MCQ Q. 17 to Q. 33 carries two marks.

***O.M.R. Sheet ભરવા અંગેની અગત્યની સૂચનાઓ આપેલ  
O.M.R. Sheetની પાછળ છાપેલ છે.***

***Important instructions to fillup O.M.R. Sheet  
are given on back side of the provided O.M.R. Sheet.***

## SECTION - I

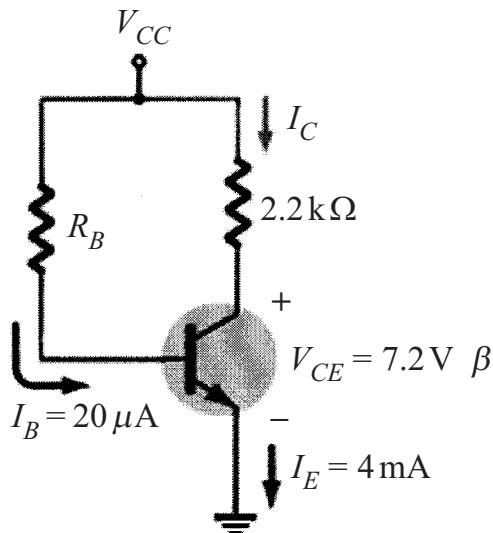
- Q. 1.** Current gain ( $A_i$ ) for CB amplifier is
- A) A positive number                      B) A negative number  
C) Zero                                        D) All the above
- Q. 2.** Input resistance for CE amplifier is
- A) Greater than  $h_{ib}$                       B) Less than  $h_{ie}$   
C) Equal to  $h_{ib}$                             D) Greater than  $h_{ie}$
- Q. 3.** In class B amplifier the Q – point is located
- A) At the centre of the active region  
B) Near the saturation region  
C) Near the cut off region  
D) Below the cut off region
- Q. 4.** CC amplifier is used as
- A) Voltage amplifier                      B) Current amplifier  
C) Power amplifier                        D) Buffer
- Q. 5.** The co-ordinates of operating point of a small signal amplifier are
- A)  $(v_{ce}, i_c)$                                 B)  $(-V_{CE}, I_C)$   
C)  $(V_{CE}, I_C)$                               D)  $(-v_{CE}, i_C)$
- Q. 6.** What is the phase difference between input voltage and output voltage in a common emitter amplifier?
- A) 180                                        B) 360  
C) 0    D) 90
- Q. 7.** If the operating point changes, \_\_\_\_\_ results
- A) Thermal runaway                      B) Faithful amplification  
C) Unfaithful amplification              D) Damage of transistor

- Q. 8.** The best biasing circuit is \_\_\_\_\_.
- A) Emitter biasing circuit
  - B) Fixed base biasing circuit
  - C) Collector to base biasing circuit
  - D) Potential divider biasing circuit
- Q. 9.** The causes of instability of operating point are
- A) Small input resistance of transistor
  - B) Temperature and transistor parameter
  - C) Temperature only
  - D) All the above
- Q. 10.** Which is beta independent biasing circuit?
- A) Fixed bias circuit
  - B) Emitter bias circuit
  - C) Collector to base bias circuit
  - D) Voltage divider bias circuit
- Q. 11.** The cause of small voltage gains for an RC coupled amplifier in the high frequency region compared to mid frequency region is due to
- A) Coupling capacitors
  - B) Series capacitor
  - C) Shunt capacitor
  - D) None
- Q. 12.** In bias compensation technique we can stabilize collector current due to variation in
- A) Temperature only
  - B) Transistor parameter only
  - C) Temperature and Transistor parameter
  - D) None

- Q. 13. Hybrid equivalent circuit for transistor is a
- A) Small signal model                      B) Large signal model  
C) Both A & B                                D) None
- Q. 14. Trans-conductance factor  $g_m$  is related to
- A) BJT    B) FET  
C) UJT    D) None
- Q. 15. For FET input current is generally assumed to be
- A) Zero    B) Infinity  
C) Negative                                      D) Positive
- Q. 16.  $h_{fb}$  is
- A) A positive number                        B) A negative number  
C) Zero    D) None

SECTION - II

- Q. 17. In the figure given below Find out  $\beta$ .



- A) 199    B) 398  
C) 19.9    D) None







**SPACE FOR ROUGH WORK**