

No. of Printed Pages : 4

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**2nd Sem. / Electrical Engg.**

**Subject : Electronics -I**

Time : 3 Hrs.

M.M. : 100

### SECTION-A

**Note:** Objectives type questions. All questions are compulsory (10x1=10)

**(Course Outcome/CO)**

- Q.1 Value of knee voltage for a silicon diode is \_\_\_\_\_ volt. (CO-1)
- Q.2 Zener diodes operate in \_\_\_\_\_ region. (CO-2)
- Q.3 Reverse saturation current in PN junction under reverse bias increases. (True/ False) (CO-1)
- Q.4 Emitter of a transistor is doped heavily (True / False) (CO-3)
- Q.5  $I_{CEO} = \text{_____} I_{CBO}$ . (CO-3)
- Q.6 \_\_\_\_\_ region of a transistor is best place for Q

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point. (CO-3)

Q.7 DC load line is a plot of \_\_\_\_\_ and \_\_\_\_\_. (CO-3)

Q.8 The  $h_{re}$  denotes \_\_\_\_\_. (CO-5)

Q.9 JFET stands for \_\_\_\_\_. (CO-5)

Q.10 MOSFET has \_\_\_\_\_ terminals. (CO-5)

### SECTION-B

**Note:** Very Short answer type questions. Attempt any ten parts (10x2=20)

- Q.11 Define CMOS. (CO-5)
- Q.12 Define current gain. (CO-4)
- Q.13 Define stability factor. (CO-3)
- Q.14 Draw symbol of NPN transistor. (CO-3)
- Q.15 Define Decibel gain. (CO-4)
- Q.16 Define Dynamic resistance. (CO-1)
- Q.17 Define Depletion layer. (CO-1)
- Q.18 Define Varactor Diode. (CO-1)

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- Q.19 Define transistor biasing. (CO-3)
- Q.20 Define phase reversal. (CO-4)
- Q.21 Define load coupling. (CO-4)
- Q.22 Define output impedance. (CO-4)

### SECTION-C

**Note:** Short answer type questions. Attempt any eight questions. (8x5=40)

- Q.23 What is effect of temperature on operating point (CO-3)
- Q.24 Define the emitter follower circuit and its applications (CO-3)
- Q.25 Explain POWER MOSFET. (CO-5)
- Q.26 Explain Transformer coupled amplifier (CO-4)
- Q.27 Explain characteristic and operation of N channel FET. (CO-5)
- Q.28 Explain fixed biasing circuit (CO-3)
- Q.29 Explain Zener diode and its use as voltage regulator. (CO-2)

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- Q.30 Explain half wave rectifier circuit and its rectifier efficiency (CO-1)
- Q.31 How current flows in a PN junction diode. (CO-1)
- Q.32 Explain DC load line. (CO-4)

### SECTION-D

**Note:** Long answer type questions. Attempt any three questions. (3x10=30)

- Q.33 Explain common emitter transistor configuration and its current gain and input and output characteristic. (CO-3)
- Q.34 Explain various types of filter circuits (CO-1)
- Q.35 Explain potential divider biasing circuits. (CO-3)
- Q.36 Explain working of RC coupled amplifier its frequency response and applications. (CO-4)

(**Note:** Course outcome/CO is for office use only)

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