17213

11819

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : *(1)* ***All*** *questions are* ***compulsory****.*
(2) Illustrate your answers with neat sketches ***wherever*** *necessary.*
(3) Figures to the ***right*** *indicate* ***full*** *marks.*
(4) Assume suitable data, if ***necessary****.*
(5) Mobile Phone, Pager and any other Electronic Communication devices are ***not*** *permissible in Examination Hall.*

Marks

1. Attempt **any ten** of the following : **20**

a) Compare active and passive component (any two points)
b) Draw the symbol of N-channel MOSFET and P- channel JFET.
c) Draw V-I characteristics of zener diode.
d) List any two types of coupling used in amplifier.
e) Give any two applications of P-N junction diode.
f) Write any two advantages and disadvantages of ICs.
g) List any two types of filter.
h) Differentiate between N-channel and P-channel J-FET.
i) Draw the symbol of zener diode and LED.
j) Give the classification of ICs.
k) Draw circuit diagram of P-N junction diode in forward bias.
l) Define resistance with its unit.

2. Attempt **any four** of the following : **16**

a) Enlist any four applications of electronics.
b) Explain working principle of LED.
c) Compare CE, CB, CC (any four point).
d) Explain working of single stage CE amplifier with circuit diagram.
e) Explain zener diode as a voltage regulator.
f) Draw the circuit diagram of crystal oscillator and give any two application.

3. Attempt **any four** of the following : **16**

a) Give classification of resisters and draw symbol of any two.
b) Explain zener breakdown and avalanche breakdown.
c) Explain N-channel J-FET with its transfer characteristics.

P.T.O.

Marks

d) Compare D-MOSFET and E-MOSFET.

e) Derive the relation between α and β.

f) State the need of oscillator with its two applications.

4. Attempt **any four** of the following : **16**

a) Draw forward and reverse characteristics of P-N junction diode.

b) Compare Half Wave Rectifier and Full Wave Rectifier.

c) Define :

i) Q point ii) DC loadline

iii) Need of biasing iv) Current gain

d) Draw the circuit diagram of transformer coupled amplifier.

e) State the need of rectifier and filter.

f) List any two advantages and disadvantages of direct coupled amplifier over RC coupled amplifier.

5. Attempt **any four** of the following : **16**

a) Define :

i) Knee voltage ii) Reverse saturation current

b) Explain working of bridge rectifier with the help of waveform.

c) Draw the circuit diagram of Astable Multivibrator with any two application.

d) Explain formation of depletion layer in P-N junction diode.

e) Draw the circuit diagram of two stage amplifier and state the need of multistage amplifier.

f) Write any four applications of Schottky diode.

6. Attempt **any four** of the following : **16**

a) Explain static and dynamic resistance of diode.

b) Draw the block diagram of regulated power supply and explain.

c) Compare P.N.P and N.P.N. transistor.

d) Draw and explain the circuit diagram of transistor as a switch.

e) Explain the construction of P-channel J-FET.

f) Define

i) Ripple factor ii) TUF

iii) Efficiency of Rectifier iv) PIV.
