Total No. of Questions :8]

SEAT No. :

P4027

[Total No. of Pages : 2

[5351]-107
F.E.
BASIC ELECTRONICS ENGINEERING
(2015 Pattern) (Semester - I & II)

Time : 2 Hours] *[Max. Marks : 50*

Instructions to the candidates:

1) ***Figures to the right indicate full marks.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Assume suitable data, if necessary.***

Q1) a) Define rectifier circuit and mention its types. Draw and explain any one with waveforms. **[6]**

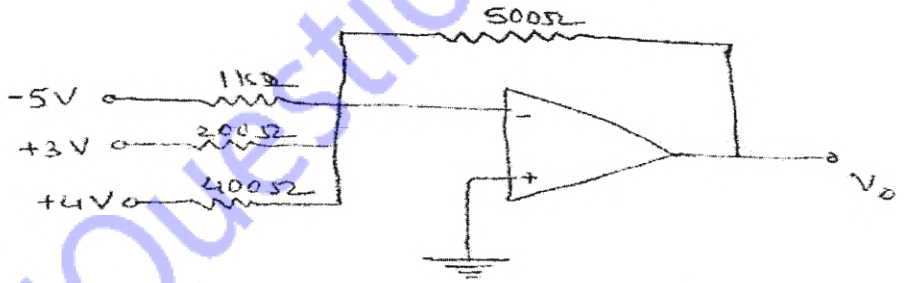
b) Draw a circuit diagram of CE amplifier. State the function of each component in the circuit. **[6]**

OR

Q2) a) Explain construction of Enhancement type N-channel MOSFET. **[6]**

b) Draw and explain Voltage Multiplier circuit. **[6]**

Q3) a) Find output voltage of op-amp circuit shown in fig. below, **[6]**



b) Draw 2 input Ex-OR gate, write logic equation and implement using basic logic gates. **[6]**

OR

Q4) a) Draw and explain circuit diagram of Astable Multivibrator using IC 555. Write equation for frequency of oscillations. **[6]**

b) Draw block diagram of Microprocessor and Microcontroller. **[6]**

P.T.O.

Q5) a) Draw and explain block diagram of Digital Thermometer. Mention two applications. **[7]**

b) Compare active and passive transducers. **[6]**

OR

Q6) a) Explain in detail : **[7]**

i) Construction of DIAC.

ii) Characteristics of DIAC.

iii) Modes of operation

b) Explain in detail, the selection criteria for transducer. **[6]**

Q7) a) Explain the elements of communication system with the help of block diagram. **[7]**

b) Write a note on co-axial cable and optical fiber cable with neat structural diagram. **[6]**

OR

Q8) a) Explain the basic structure of mobile phone system. **[6]**

b) A carrier signal $20\sin(2\pi\times104t)$ is used to modulating signal $10\sin(2\pi\times103t)$. Determine the modulation index for the modulated wave and draw the frequency spectrum for AM wave. **[7]**

ⓘⓘⓘⓘ