

Total No. of Questions :8]

SEAT No. :

P4027

[5351]-107

[Total No. of Pages : 2

F.E.

**BASIC ELECTRONICS ENGINEERING**  
**(2015 Pattern) (Semester - I & II)**

Time : 2 Hours]

[Max. Marks : 50

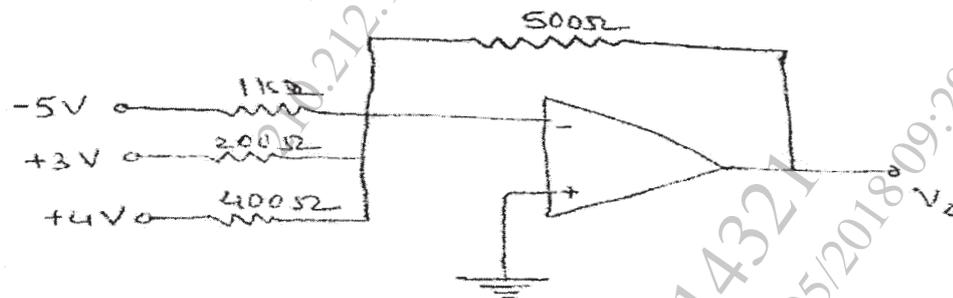
Instructions to the candidates:

- 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]

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- 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  $20\sin(2\pi \times 104t)$  is used to modulating signal  $10 \sin(2\pi \times 103t)$ . Determine the modulation index for the modulated wave and draw the frequency spectrum for AM wave. [7]

