

Total No. of Questions : 4]

SEAT No. :

P1273

[Total No. of Pages : 2

**OCT/FE/INSEM/-6**  
**F.E. (Semester - I)**  
**BASIC ELECTRONICS ENGINEERING**  
**(2019 Pattern)**

*Time : 1 Hour]*

*[Max. Marks : 30*

*Instructions to the candidates:*

- 1) Answer Q.1 or Q.2, Q.3 or Q.4
- 2) Figure to right indicate full marks.

- Q1)** a) Compare active and passive components explain passive components. [5]  
b) Explain the operation of full wave Rectifier with suitable diagram and wave forms. [5]  
c) Explain the construction and working principle of LED. [5]

OR

- Q2)** a) Explain impact of electronics on Industry. [5]  
b) Explain the construction and working of P - N junction diode. Draw its V - I characteristics [5]  
c) Draw circuit diagram of zener diode as voltage regulator and Explain it. [5]

- Q3)** a) Draw and explain BJT as a switch. [5]  
b) Explain construction and operation of N - channel EMOSFET. [5]  
c) For inverting amplifier using op = Amp, if  $R_f = 100\text{K}\Omega$ ,  $R_1 = 10\text{K}\Omega$ ,  $V_{cc} = \pm 10\text{V}$ ,  $V_i = 2\text{V}$   
i) Calculate output voltage.  
ii) Is the result in part (i) practically possible? Justify. [5]

OR

**P.T.O.**

- Q4)** a) Explain construction of BJT with respect to area and doping concentration. Mention the types of BJT. [5]
- b) Explain construction and operation of p - channel EMOSFET. [5]
- c) Write ideal and practical values of five parameters of op-Amp. [5]

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