Total No. of Questions : 4]

SEAT No. :

PA-1683

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First Year (Engineering)

BASIC ELECTRONICS ENGINEERING

(2019 Pattern) (Semester - I) (104010)

Time : 1 Hour] *[Max. Marks : 30*

Instructions to the candidates:

1) ***Attempt Q.1 or Q.2 and Q.3 or Q.4.***
2) ***Figures to the right indicate full marks.***
3) ***Assume suitable data, wherever necessary.***
4) ***Use of electronic pocket calculator is allowed.***

Q1) a) How electronic components are categerised in active and passive components and compare them. **[5]**

b) Draw and explain V-I characteristics of P-M Junction Diode and define these parameters. **[5]**

i) Cut-in Voltage

ii) PIV

iii) Reverse safuration current

c) Explain how Zener Diode can be used as voltage regulator. **[5]**

OR

Q2) a) Explain impact of electronics on industry and society. **[5]**

b) Explain working of Bridge Rectifier circuit with the help of wave forms. **[5]**

c) Determine the minimum and maximum input voltage for which zener Diode works as voltage regulator, **[5]**

For zener assume

Iz (min) = 1 MA

Iz (max) 10 MA

Zz = 0-Ω Vz = 5V

and RL = 1KΩ Rs = 470Ω

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Q3) a) Draw output characteristics of BJT in common Emitter configaration. Indicate different operating regions in it. **[5]**

b) Draw circuit diagram of single stage E-MOSFET amplifier in common source configuration and explain functions of each component used in it. **[5]**

c) Draw and explain functional black diagram of operational amplifier. **[5]**

OR

Q4) a) Draw circuit diagram of single stage BJT amplifier in common emitter configuration and explain function of each components. **[5]**

b) Explain working of N-channel E-MOSFET with the help of its construction. **[5]**

c) Define following parameters of op-amp and mention their ideal and practical values. **[5]**

i) CMRR

ii) Input Bias Current

iii) Input offset voltage

iv) Slew Rate

v) PSRR

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