SEAT No. :

P2018

F.E.
BASIC ELECTRONICS ENGINEERING
(2012 Pattern)

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

Instructions to the candidates:

1) *All questions are compulsory.*
2) *Figures to the right indicate full marks.*

Q1) a)   Explain Voltage tripler and quadrupler circuit.   **[6]**

   b)   Explain input output characteristics of CE amplifier.   **[6]**

                                   OR

Q2) a)   Explain working principle of photo diode with characteristics. Why photodiode is operated in reverse biased mode when used as a optical detector.   **[6]**

   b)   Explain Drain Characteristics of an n-channel enhancement type MOSFET.   **[6]**

Q3) a)   Draw the circuit diagram and write the output equation for   **[6]**

   i)   Inverting summer with three inputs

   ii)   Ideal differentiator

   b)   Explain the operation of Multiplexer and Demultiplexer   **[6]**

                                   OR

Q4) a)   Draw three pin IC voltage regulator. Define load and Line regulation.
                                                                           [6]

   b)   Implement the following with minimum number of NAND gates. **[6]**

   i) $y = AD + CB$

   ii) $z = A(\bar{B} + CD)$

                                                                 P.T.O.

Q5) a) Explain with block diagram Digital Thermometer. **[7]**

b) Explain construction of SCR. **[6]**

OR

Q6) a) Explain various criteria used to select a transducer. **[7]**

b) Explain Characteristics of DIAC. **[6]**

Q7) a) Give advantages, disadvantages and applications of Co-axial cable.**[6]**

b) Explain the block diagram of GSM system. **[7]**

OR

Q8) a) Define Modulation index with reference to AM and FM. Draw AM waveform for overmodulation case. **[6]**

b) Write a note on Optical Fiber and explain how light travels through a fiber. **[7]**

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