

Total No. of Questions : 10]

SEAT No. :

P125

[Total No. of Pages : 2

[5871]-630

B.E. (Electronics Engineering)
ELECTRONICS SYSTEM DESIGN
(2015 Pattern) (Semester - I) (404203)

Time : 2½ Hours]

[Max. Marks : 70

Instructions to the candidates:

- 1) Answer Q.1 or Q.2, Q.3 or Q.4, Q.5 or Q.6, Q.7 or Q.8.
- 2) Neat diagrams must be drawn wherever necessary.
- 3) Figures to the right indicate full marks.
- 4) Assume suitable data, if necessary.
- 5) Use of pocket calculator is allowed.

- Q1)** a) Explain in detail various stages used in New Product Development. [6]
b) Explain various techniques used to ensure reliability and quality of electronic products. [4]

OR

- Q2)** a) State and explain specifications considered for selection of ADC [6]
b) Explain the significance of following terms of DAC: [4]
i) Resolution.
ii) Offset error.

- Q3)** a) Compare serial interface & parallel interface in micro-controller. [4]
b) Explain CAN, I2C & LIN with their applications & limitations. [6]

OR

- Q4)** a) Compare different types of microcontroller architecture & selection criteria of microcontrollers. [5]
b) Explain need of Instrumentation Amplifier in analog signal conditioning. Also explain different errors which occur in Instrumentation amplifier. [5]

- Q5)** a) With the help of diagram, explain different phases of software design. [8]
b) What is mean by FSM? Explain use of FSM in electronics product design. [8]

OR

P.T.O.

- Q6)** a) Explain with neat diagram different constructs of regular programming. [8]
b) Explain factors which affect the choice of assembly language & high level language. Justify your answer with suitable examples. [8]

- Q7)** a) Explain the term Signal Integrity? Explain various factors that affect Signal Integrity in high speed digital circuits. [6]
b) The supply and ground traces are running exactly symmetric on the opposite sides of PCB. The total length in common is 300 mm., the supply trace width is 4 mm. and the ground trace width is 6 mm. The lamination used having relative dielectric constant 5.4. Calculate the capacitance between these two traces. [5]
c) Explain rules of PCB Design for Digital circuits. [6]

OR

- Q8)** a) Explain rules of PCB design for Shielding & Guarding in precision circuits. [5]
b) Discuss Routing technology configurations used in PCB design. [6]
c) State and explain the parameters considered while designing an enclosure of Electronic product. [6]

- Q9)** a) Discuss the circuit of transistor based LC Oscillator? Explain in detail how DC & AC analysis can be used for troubleshooting. [9]
b) Explain how will you diagnose faults in high speed digital circuits using Logic Analyzer. [8]

OR

- Q10)** a) Explain Significance of Bandwidth, sampling rate, probe impedance, memory depth in DSO. [8]
b) Draw the block diagram of DSO ? Explain how it is better than CRO in testing & trouble-shooting electronic circuits. [9]

