Total No. of Questions : 8]

SEAT No. :

PD-4054

[Total No. of Pages : 2

[6402]-13
S.E. (Electrical)
203143: Analog and Digital Electronics
(2019 Pattern) (Semester - III)

Time : 2½ Hours] *[Max. Marks : 70*

Instructions to the candidate:

1) ***Solve Q1 or Q2, Q3 or Q4, Q5 or Q6, Q7 or Q8.***
2) ***Neat diagrams must be drawn wherever necessary.***
3) ***Figures to the right side indicate full marks.***

Q1) a) Explain working of SRAM with diagram. **[6]**

b) Explain Programmable Logic Array. Implement the following Boolean functions using PLA: **[6]**

A=XY+XZ' B=XY'+YZ+XZ'

c) Write a short note on FPGA **[6]**

OR

Q2) a) Explain working of DRAM with diagram. **[6]**

b) Write a short note on CPLD. **[6]**

c) Explain Programmable Array Logic in detail. **[6]**

Q3) a) Explain OPAMP as voltage to current converter. **[5]**

b) Explain working of OPAMP as instrumentation amplifier. **[5]**

c) Explain the working of OPAMP as a comparator along with circuit diagram and input and output waveforms. **[8]**

OR

P.T.O.

Q4) a) With the help of neat diagrams, explain OPAMP as peak detector. **[5]**

b) Define the characteristics of practical OPAMP. **[5]**

c) Explain generation of saw tooth waveform using OPAMP. Draw input & output waveforms. **[8]**

Q5) a) Explain High pass filter using op-amp with its frequency response. **[5]**

b) Explain the function of LM 317 as adjustable voltage regulator. **[5]**

c) Draw the diagram of IC 555 configured in monostable mode. Draw necessary waveforms. **[7]**

OR

Q6) a) What is the difference between fixed and variable voltage regulators? Explain IC78XX and IC 79XX series regulators. **[5]**

b) Explain the operation of IC555 as astable multivibrator along with waveforms. **[5]**

c) Draw and explain frequency response characteristic of ideal and practical Low Pass Filter. **[7]**

Q7) a) Explain working of single phase full wave bridge rectifier supplying R-L load. **[5]**

b) Draw neat diagram and explain single phase half wave rectifier with pure resistive load. Also define peak inverse voltage. **[5]**

c) Explain in detail the working of center tapped rectifier connected to the R-L load. **[7]**

OR

Q8) a) Explain working of single phase half wave rectifier with RL load. **[5]**

b) Explain the working of single-phase full wave centre tapped rectifier with pure resistive load. Also draw the input and output waveforms. **[5]**

c) With the help of circuit diagram and relevant waveforms, explain the operation of a 3-phase bridge rectifier with resistive load. **[7]**