



Progressive Education Society's

Seat No.

Modern College of Arts, Science and Commerce (Autonomous)

Shivajinagar, Pune -5

[Total no. of questions:4]

[Total number of pages: 2]

First Year B.Sc. Computer Science (Mar-2020)

End Semester Backlog Examination, (2019 Pattern) Semester – I

Course Code: 19CsEleU101

Course Name: Fundamentals of Analog Electronics

Date: 13-03-2020

Time: 10.00 a.m. to 12.00 p.m.

[Time: 2 Hours]

[Max Marks: 60]

Instructions:

1. All Questions are compulsory.
2. Only non-programmable calculators are allowed.
3. Draw diagrams wherever necessary.
4. Figures to the right indicate full marks.

Q1. Attempt any six of the following.

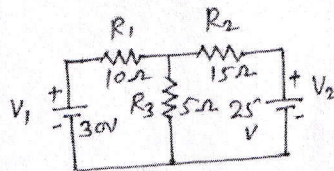
(6 X 2=12)

1. Define 'Line regulation' of regulated power supply.
2. Draw the symbols of (i) PNP transistor (ii) NPN transistor.
3. State 'KVL and KCL'.
4. Two inductors with the values 200 mH and 100mH are connected in parallel, find their equivalent inductance value.
5. Define 'Open circuit voltage and short circuit current' of solar cell.
6. Differentiate between Half wave rectifier and Bridge rectifiers (any two points).
7. Draw the circuit diagram of low pass filter. Write the formula for its cut-off frequency.
8. State Thevenin's theorem.

Q2. A. Attempt any four of the following

(4 X 4 = 16)

1. Find the current flowing through resistor R_3 in following circuit using Kirchoff's laws.

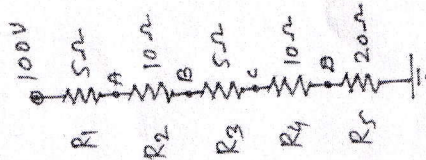


2. Explain the series LCR resonant circuit.
3. Explain the working of Zener diode.
4. Explain with suitable diagram the working of N - channel Enhancement only MOSFET.
5. What is regulated power supply? Explain its working with neat block diagram.

Q3. Attempt any four of the following

(4 X 4 = 16)

1. Differentiate between BJT and FET.
2. Explain the working of step up transformer.
3. Find the voltage at circuit nodes A,B,C and D using potential divider formula in the following circuit.

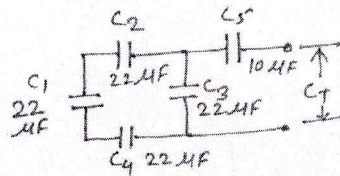


4. Explain the working of high pass filter circuit.
5. Explain MOSFET as a switch.

Q4. Attempt any four of the following

(4 X 4 = 16)

1. Explain working principle of solar cell.
2. Find the resonant frequency of series LCR circuit with $R=2K\Omega$, $L=200mH$ and $C=0.1\mu H$.
3. Explain N – channel JFET.
4. Find the equivalent capacitance C_T from the following circuit.



5. Explain the formation of N-type semiconductor.
