Enrolment No: E21CSEU0804

Name of Student: _____

Department/ School: _____

END TERM EXAMINATION EVEN SEMESTER 2021-22

COURSE CODE	EECE105L	MAX. DURATION	2 Hours 30 Minutes
COURSE TITLE	**Fundamentals of Electrical and Electronics Engineering**		
COURSE CREDIT	5	TOTAL MARKS	35

GENERAL INSTRUCTIONS: -

1. Do not write anything on the question paper except **name, enrolment number** and **department/school.**

2. Carrying mobile phone, smart watch and any other non-permissible materials in the examination hall is an act of **UFM.**

COURSE INSTRUCTIONS: Attempt all the questions. Each question carries 5 marks.

Max Marks: 35

1) For the circuit shown in Fig. 1, find the current through and power consumed/delivered by the 24 V voltage source. 4+1 Marks
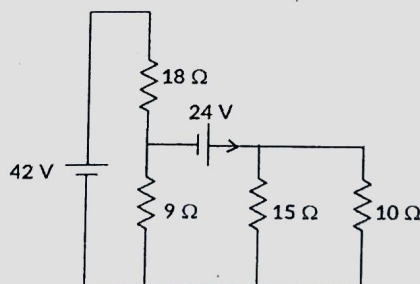

Fig. 1

2) For the circuit shown in Fig. 2, determine the currents I_1, I_2 and I_3. The diodes are made of silicon and cut-in voltage is 0.7 V.

2+2+1 Marks

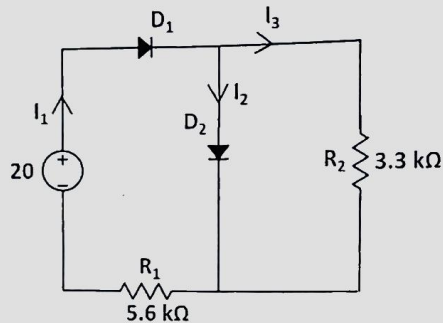

Fig. 2

3) In Fig. 3, the input voltage varies from 30 V to 60 V. The diode is made of silicon and Zener breakdown voltage is 5 V. Find out the maximum and minimum current flowing through the Zener diode.
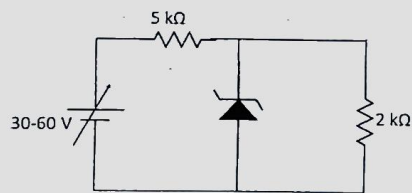
2.5+2.5 Marks

Fig. 3

4) Find the Norton equivalent resistance and Norton equivalent current of the given circuit in Fig. 4, where the load resistor is R_L.
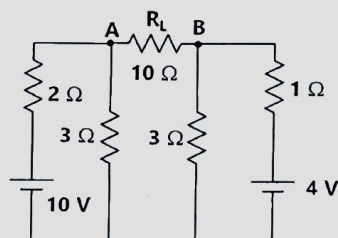
1+4 Marks

Fig. 4

5) For the circuit shown in Fig. 5, derive the transfer function expression and identify the filter type. Also, find out the cut-off frequency of the filter. Input and output of the filter are taken between A and B; B and C respectively.   2+1+2 Marks
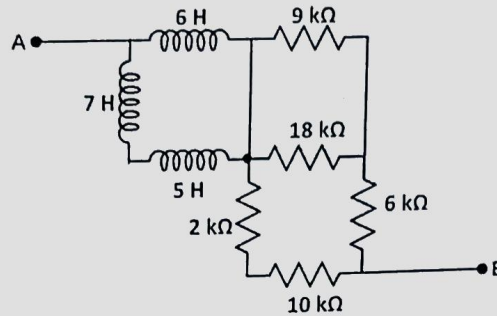

Fig. 5

6) In Fig. 6, draw the output waveform with equivalent circuits in positive and negative halves. The diodes are made of silicon and cut-in voltage is 0.7 V. The bias voltage V_B is 5 V.
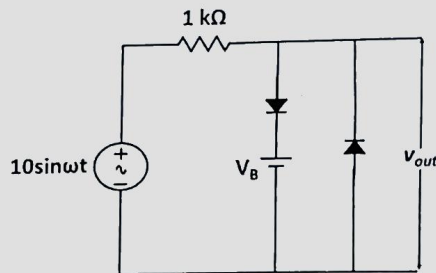2.5+2.5 Marks

Fig. 6

7) Convert $(613572.462)_8$ into hexadecimal. Realize 2-input AND gate, OR gate and Inverter using only 2-input NOR Gates.   2+3 Marks

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