

F.Y. B. SC. (COMPUTER SCIENCE) SEM – I (2014 COURSE) : SUMMER - 2018

SUBJECT – LINEAR ELECTRONICS-I

Day: Monday
Date: 23/04/2018

S-2018-0832

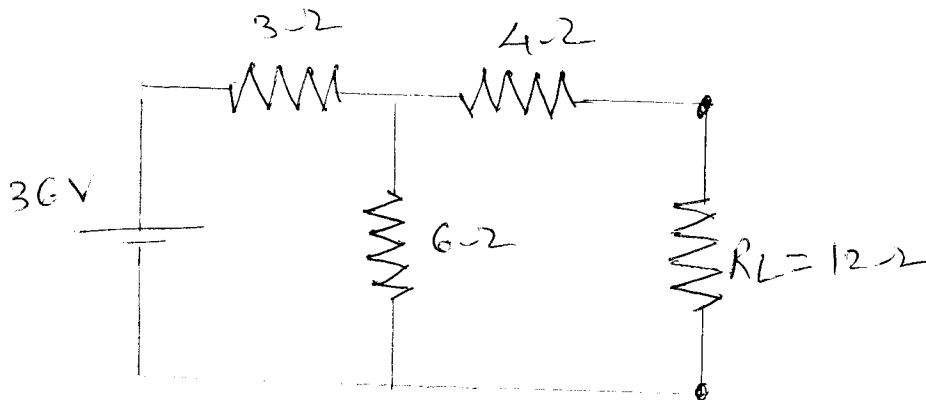
Time: 12.00 NOON TO 02.00 PM
Max. Marks: 40

N.B.:

- 1) All the questions are **COMPULSORY**.
- 2) Figures to the right indicate **FULL** marks.
- 3) Draw diagrams **WHEREVER** necessary.
- 4) Use of **CALCULATOR** is allowed.

Q.1 Answer ANY TWO of the following: [10]

- a) Explain with neat diagram the working of transistor as an amplifier in CE mode.
- b) Differentiate between JFET and BJT
- c) Apply Thevenin's theorem to find current through load resistance R_L in the following circuit.

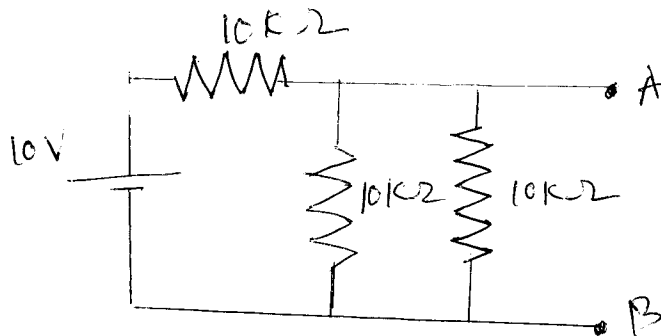


Q.2 Answer ANY TWO of the following: [10]

- a) Give the statements for the following :
 - i) Superposition theorem
 - ii) Maximum power transfer Theorem
- b) Explain classification of transistor amplifier based on position of Q point.
- c) Explain construction of carbon composition resistor with necessary diagram.

Q.3 Answer ANY TWO of the following: [10]

- a) Solve the given circuit using Norton's Theorem.



- b) Explain with neat diagram working of n- channel depletion MOSFET when V_{GS} is negative.
- c) With neat diagram explain the working of UJT as relaxation oscillator .

Q.4 Answer **ANY FIVE** of the following:

[10]

- a) State the relation between α & β of a transistor
- b) Calculate the value of resistor for the following colour code.
 - i) Red black brown gold
 - ii) Orange orange green silver
- c) Define the following terms for FET:
 - i) Transconductance
 - ii) Dynamic Drain Resistance
- d) Define inductance. Draw symbols for any two types of inductors.
- e) Draw I-V characteristics of UJT.
- f) How to bias transistor amplifier in CE mode to keep it in active region.
- g) Give the classification of amplifiers on the basis of frequency range.

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