

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

WINTER - 2017

SUBJECT – LINEAR ELECTRONICS-I

Day: Friday
Date: 03/11/2017

W-2017-0732

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]

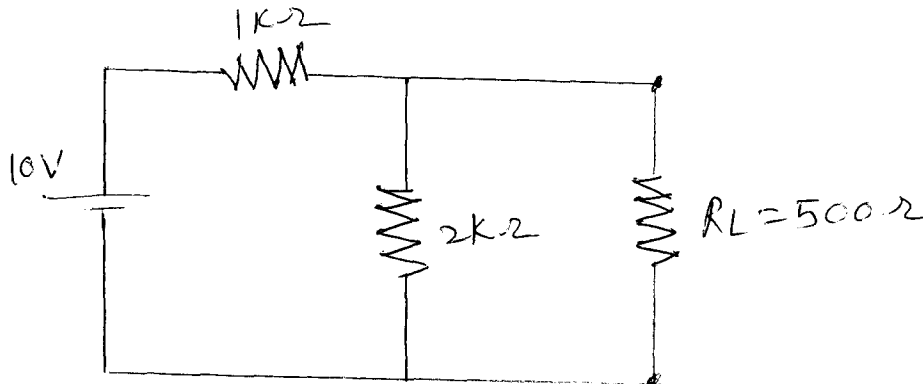
- a) With neat diagram explain the working of transistor in CE – mode. Draw its output- characteristic curve.
- b) Explain the colour code theory to find the value of fixed resistors.
- c) Explain the working principle of n-channel FET with neat diagram.

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

- a) Give the statements for the following:
 - 1) Norton's Theorem
 - ii) Maximum power transfer theorem
- b) Explain with neat diagram the operation of n-channel enhancement MOSFET.
- c) Give the classification of amplifier on the basis of Q-point. Explain any two types.

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

- a) Explain with neat diagram working of transistor as switch.
- b) Draw I-V characteristics of UJT and explain negative resistance.
- c) Solve the given circuit using Thevenin's theorem



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

[10]

- a) Define α and β for transistor.
- b) Draw symbols for the following
 - 1) npn transistor
 - 2) UJT
- c) Draw I-V characteristics of SCR
- d) Name any four types of resistors.
- e) Write full form of MOSFET also give any two applications of it.
- f) For a transistor collector current is 20 mA and base current is 40 mA. Calculate α for the transistor.
- g) Comment “Common collector configuration is rarely used”.

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