R16

Code No: 131AK

JAWAHARLAL NEHRU TECHNOLOGICAL UNIVERSITY HYDERABAD
B.Tech I Year I Semester Examinations, December - 2016
BASIC ELECTRICAL AND ELECTRONICS ENGINEERING
(Common to EEE, ECE, CSE, EIE, IT)

Time: 3 hours **Max. Marks: 75**

Note: This question paper contains two parts A and B.
Part A is compulsory which carries 25 marks. Answer all questions in Part A. Part B consists of 5 Units. Answer any one full question from each unit. Each question carries 10 marks and may have a, b, c as sub questions.

PART- A **(25 Marks)**

1.a) What is the significance of j- notation in analysis of A.C circuits? [2]
b) Obtain the V-I relationship for passive elements. [3]
c) What is the relation between bandwidth and quality factor in RLC series resonant circuit? [2]
d) State Tellegen's theorem. [3]
e) What is a bleeder resistance? Why it is used in L-C filter? [2]
f) Determine AC resistance for a semiconductor diode with a forward bias of 0.25V. Reverse saturation current at room temperature is of 1.2μA. [3]
g) What is thermal runaway in transistor amplifier circuit? [2]
h) In a transistor determine base current if emitter current is 1.00 mA and collector current is 0.92 mA. [3]
i) Define pinch-off voltage of a JFET. [2]
j) What are the relative merits and demerits of a FET amplifier over a transistor amplifier? [3]

PART-B **(50 Marks)**

2.a) Find equivalent resistance R_{ab} in figure 1. Resistor values are in ohms.

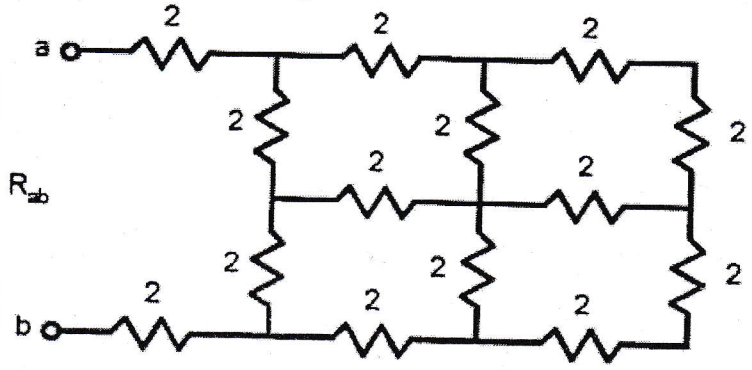

Figure: 1