

Roll No.					8	r

B.E / B.Tech (Full Time) DEGREE ARREAR EXAMINATIONS, NOV / DEC 2013

BIOMEDICAL ENGINEERING BRANCH **THIRD Semester**

BM 9202 ELECTRONIC CIRCUITS

(Regulation 2008)

Time: 3 Hours

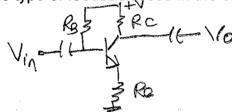
Answer ALL Questions

Max. Marks 100

(8)

PART-A (10 x 2 = 20 Marks)

- 1. Define ripple factor of a rectifier.
- What are the different regions of operation of a BJT. 2.
- Draw high frequency model of BJT. 3.
- A common collector amplifier has output resistance of 26 Ω . Calculate the transconductance of the active device of the amplifier.
- 5. Identify the type of feedback used in the circuit shown.



- Write the expressions for frequency of oscillation of Hartley and Colpit oscillator. 6.
- What is the significance of Heat sink in power amplifiers. 7.
- How to bias the power amplifier to work as class B power amplifier. 8.
- 9. Define Line and Load Regulation.
- What are the different types of DC-DC converter. 10.

PART-B (5 x 16 = 80 Marks)

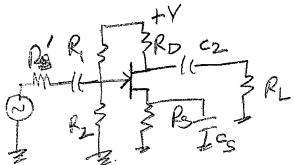
- 11.(i) Define class A operation with location of operating point. Explain Class A power amplifier and derive for its efficiency. How efficiency can be improved.
 - (ii) Explain Class B power amplifier. Derive for its efficiency. How cross over distortion. can be reduced. (8)
- 12.(a)(i) Locate the operating point of the circuit shown.

(ii) Explain voltage divider bias of JFET showing the operating point in the output characteristics and in the transfer characteristics. (8) 12.(b) Explain FWR with capacitor filter and derive for ripple factor.

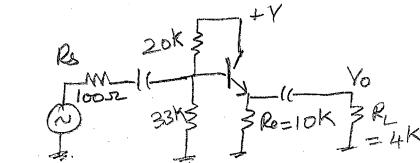
13.(a) Draw a CE amplifier with voltage divider bios with its equivalent circuit, derive for Avs. R_{in}, A_{IS} and R_o. (16)

OR

13.(b)(i) In the circuit shown write the expressions for cut-off frequencies due to C1, C2 and



(ii)



h/e = 300h/e = 5.2K

Calculate the voltage gain Rin and Ro.

(10)

(4)

14.(a) Explain the operation of Weinbridge oscillator and derive for the output frequency.

OR

- 14.(b)(i) Draw the topological block diagram for voltage series, voltage shunt, current series and current shunt feedback. (8)
 - (ii) Write the merits and demerits of Negative feed back amplifier.
 - (iii) A voltage shunt amplifier has R_{in} = 5 k without feedback and Desensitivity factor of 5. Calculate Rif. (4)

15.(a) Explain how voltage regulation is obtained using series voltage regulator.

OR

15.(b) Describe any one type of DC-DC converter using circuit diagram.