Student Exam No: _____

GANPAT UNIVERSITY

B.Tech Sem. III[rd] Biomedical & Instrumentation Engineering

Regular Exam November / December-2012

2BM 301: Linear Electronics

Time: 3 Hours **Total Marks-70**

Instructions:-

1. All the questions are compulsory.
2. Answer of each section must be written in separate answer books.
3. Figure to the right indicate marks.
4. Assume data, if needed.
5. Conventional terms / notations are used.

Section – I

Que.1 **[12]**

a) Explain CB characteristics of BJT with neat diagram.

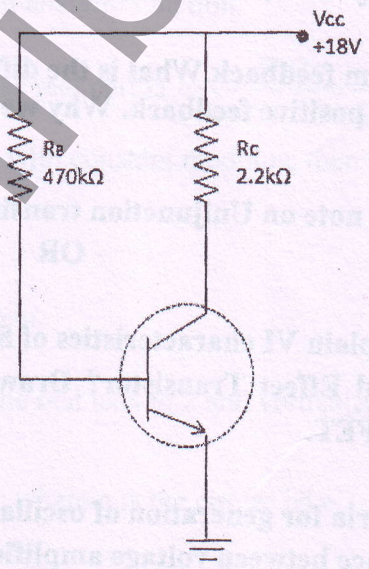
b) Draw and explain full wave bridge rectifier with necessary diagrams.

OR

Que.1. **[12]**

a) What is biasing? Name the types of biasing.

b) Draw load line for fixed bias circuit showing below. Draw load line for forhFE= 50,100,200. And also give your view on stability of all.



Que.2. **[11]**

a) Draw and explain Hartley oscillator.

b) For Colpitt Oscillator inductor values are 15mH, capacitor value is 3μF and 7μF. Calculate frequency.

OR

Que.2 [11]

a) Explain Darlington pair with necessary diagrams.

b) Design Wein Bridge oscillator for frequency 5kHz.

Que.3. [12]

a) Draw ac analysis and h-parameter model for CE amplifier without bypass capacitor.

b) What is Loadline? What is the importance of Q-point?

c) Give the difference between Zener breakdown and Avalanche breakdown

Section – II

Que-4 [12]

a) Give difference between class A transformer coupled and pushpull power amplifier.

b) Why voltage amplifier cannot be used as power amplifier? What are the performance parameters of power amplifier?

OR

Que-4 [12]

a) Explain Class B push-pull amplifier with necessary diagram.

b) Enlist applications of following:
BJT, FET, Thyristor,Oscillator, Power amplifier,UJT

Que-5 [11]

a) Define the term feedback. What is the difference between negative feedback and positive feedback. Why we don't use positive feedback in an amplifier?

b) Write a short note on Unijunction transistor.

OR

Que-5 [11]

a) Draw and explain VI characteristics of Silicon Control Rectifier

b) What is Field Effect Transistor? Draw and explain construction and working of JFET.

Que-6 [12]

a) Explain criteria for generation of oscillation.

b) Give difference between voltage amplifier and power amplifier.

c) Give classification of Thyristor.

'END OF PAPER'