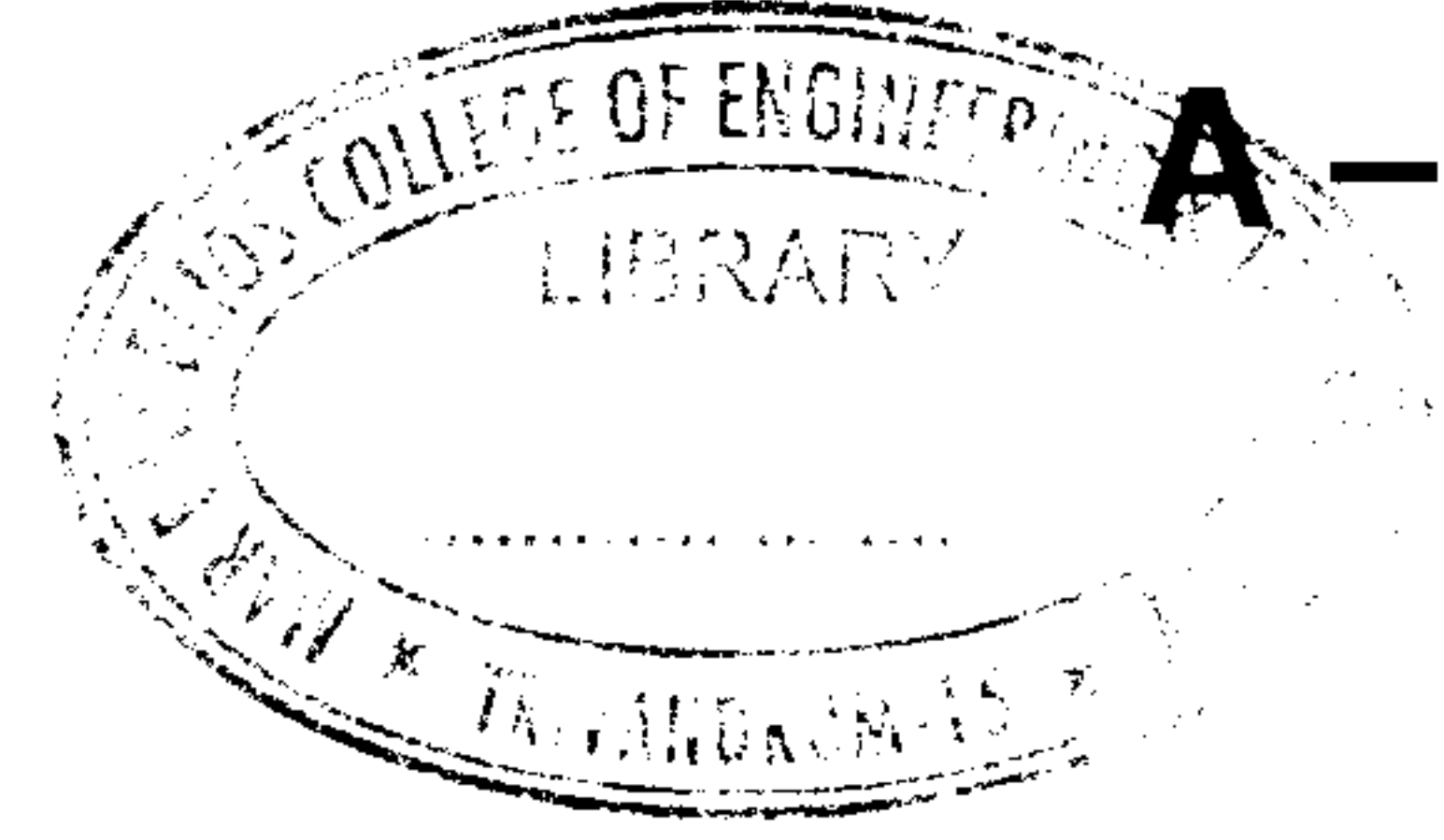




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A – 4135

Reg. No. :

Name :

**Combined First and Second Semester B.Tech. Degree Examination,
December 2016
(2013 Scheme)**

13.109 : BASIC ELECTRONICS ENGINEERING (BCEHMNPSU)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **2** marks.

1. Differentiate between avalanche breakdown and zener breakdown.
2. A typical BJT has a β of 100. What is the corresponding value of α ?
3. Implement the logic function $Y = A(B + C) + DE$ using logic gates.
4. List any 4 ideal characteristics of an operational amplifier.
5. Explain the need for proper biasing in amplifiers.
6. List the advantages of satellite communication.
7. Differentiate between PSK and FSK.
8. Write RADAR range equation.
9. List the advantages of optical communication.
10. Explain the principle of light transmission through optical fiber. **(10×2=20 Marks)**

PART – B

Answer **any one full** question from **each** Module. **Each** question carries **20** marks.

Module – I

11. a) With the aid of necessary diagrams explain in detail about the forward and reverse characteristics of a zener diode.
b) List the applications of a zener diode.

OR

12. a) List the advantages of FETs over BJTs.
b) Draw the drain characteristic of a JFET and explain different regions of operation.
c) Draw the Transfer characteristic of a JFET and explain.

P.T.O.



Module – II

13. a) With a neat circuit diagram explain the operation of a bridge rectifier.
b) Derive the expression of rectification efficiency of a bridge rectifier.
c) List the merits and demerits of bridge rectifiers over centre-tap full wave rectifiers.

OR

14. a) With a neat circuit diagram explain the operation of a RC phase shift oscillator.
b) Draw the block diagram of public addressing system and explain its operation.

Module – III

15. a) Compare Amplitude and Frequency modulation.
b) Derive the mathematical expression of an amplitude modulated signal.
c) With a neat block diagram explain the operation of a super heterodyne radio receiver.

OR

16. a) Explain in detail about ASK and FSK digital modulation techniques.
b) Explain in detail about the principles of Global positioning system.

Module – IV

17. a) With a neat diagram explain in detail about optical communication system.
b) With a neat diagram explain GSM.

OR

18. a) With a neat diagram explain the working of CCTV system.
b) With necessary diagrams explain the operation of colour TV.

