K16U 1230

Reg. No. : .....

Name : .....

II Semester B.Sc. Degree (CCSS – Reg./Supple./Improv.) Examination, May 2016
(2014 Admn. Onwards)
CORE COURSE IN PHYSICS
2B02 PHY : Electronics – I

Time : 3 Hours Max. Marks : 40

***Instruction** : Write answers in **English** only.*

SECTION – A

Answer **all** – **Very short** answer type. **Each** question carries **one** mark :

1. The most commonly used transistor arrangement is _____ configuration.
2. The constant current region of a JFET lies between _____
3. $(101)_2 = (- - - - - - -)_{10}$.
4. _____ is a universal gate. **(4×1=4)**

SECTION – B

Answer **any seven** – **Short** answer type. **Each** question carries **two** mark :

5. Why CE transistor configuration is commonly used ?
6. Draw the output characteristics of CE transistor configuration and mark the different regions.
7. Give two important applications of CB amplifiers.
8. Compare n-channel JFET and p-channel JFET.
9. Explain the construction of a JFET.
10. Give some practical applications of JFET.
11. Realise AND gate using NAND gates.
12. Write De-Morgans theorem.
13. What is Gray code.
14. Explain signed numbers. **(7×2=14)**

P.T.O.

SECTION – C

Answer **any four** – **Short** essay/problem type. **Each** question carries **three** marks.

15. Explain operating point with diagram.
16. Describe the potential divider method in detail.
17. Explain the working of a n-channel JFET.
18. In a Common base connection $\alpha = 0.95$. The voltage drop across $2k\Omega$ resistance which is connected in the collector is 2V. Find the base current.
19. Explain exclusive.OR gate.
20. Subtract 7 from 18 by two's complement method. **(4×3=12)**

SECTION – D

Answer **any two** – **Long** essay type. **Each** question carries **five** marks.

21. Describe a Common Emitter transistor amplifier. Draw necessary figures and graphs.
22. Explain :
    i) Self Bias
    ii) Gate Bias in the case of JFET
23. Explain combinational logic circuits using NAND and NOR gates.
24. Write short notes on :
    i) Binary numbers
    ii) Hexadecimal numbers
    iii) Octal numbers. **(2×5=10)**
