K16U 1230

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)

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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)**

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