M 8790

Reg. No. : .....

Name : .....

II Semester B.Sc. Degree (CCSS – 2014 Adm. – Regular) Examination, May 2015
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. If the value of α is 0.9 then the value of β is _____
2. A JFET is a _____ driven device.
3. The 8 bit binary equivalent of $(187)_{10}$ is _____
4. NAND gate is known as _____ gate. **(4×1=4)**

SECTION – B

Answer **any seven**. Short Answer Type. **Each** question carries **two** marks.

5. What is stabilisation of operating point ? What is its need ?
6. What are the essentials of a transistor biasing circuit ?
7. Define α. Show that α is always less than unity.
8. Sketch the output characteristics of a JFET.
9. List any four advantages of JFET.
10. What is the importance of JFET ?
11. Realise OR gate using NAND gates.

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12. What is the importance of NAND gates ?
13. Convert the decimal number 133 into binary equivalent.
14. What is positional number system ? **(7×2=14)**

SECTION – C

Answer **any four**. Short Essay/Problem Type. **Each** question carries **three** marks.

15. Compare the various characteristics of the three transistor configurations.
16. 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.
17. Explain the parameters of JFET.
18. How JFET acts as an amplifier ?
19. Explain Exclusive OR gate.
20. Explain the representation of floating point numbers. **(4×3=12)**

SECTION – D

Answer **any two**. Long Essay Type. **Each** question carries **five** marks.

21. Describe the potential divider method in detail. How stabilisation of operating point is achieved by this method.
22. Explain :
    i) Self Bias
    ii) Gate Bias in the case of JFET.
23. Explain the universal property of NAND and NOR gate.
24. What are binary coded decimal ? How two BCD numbers are arithmetically operated ? **(2×5=10)**