



K19U 0591

Reg. No. : .....

Name : .....

IV Semester B.Sc. Degree (CBCSS – Reg./Supple./Imp.)

Examination, April 2019

COMPLEMENTARY COURSE IN PHYSICS

4C04 PHY : Modern Physics and Electronics

(2014 Admission Onwards)

Time : 3 Hours

Max. Marks : 32

SECTION – A

Answer **all 5** questions. Very short answer type. **Each** question carries **1** mark.

1. The main source of energy of sun is \_\_\_\_\_
2. The total amount of light energy given out by a star in all directions per unit time is called \_\_\_\_\_
3. An empty site of an atom in a crystal is called \_\_\_\_\_
4. Due to negative feedback, the output impedance of an amplifier \_\_\_\_\_
5. The 8 bit binary equivalent of  $(187)_{10}$  is \_\_\_\_\_

SECTION – B

Answer **any four** short answer type. **Each** question carries **two** marks.

6. What is meant by mean life ? Write an expression for it.
7. What are Quarks ?
8. What is the purpose of emitter bypass capacitor  $C_E$  in single stage amplifier ?
9. What is half adder ?
10. What is meant by radioactive carbon dating ?
11. How an interstitial defect arises ?



## SECTION – C

Answer **any three** short essay/problem. **Each** question carries **three** marks.

12. Write a short note on nuclear reactors.
13. Explain with diagram, the CE characteristics of a transistor.
14. The gain of an amplifier is 100. When negative feedback is applied, gain is reduced to 20. Find the fraction of output that is feedback to the input.
15. Write a short note on edge dislocation and screw dislocation.
16. Briefly explain supernova explosion.

## SECTION – D

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

17. What is an oscillatory circuit ? With the help of a diagram, briefly explain any 2 oscillators.
18. Give an account of various point defects.
19. How the sun and stars get their energy ?
20. Explain the elementary particles in detail.