TB146660A   Reg. No………………………….

                                                Name………………………....

B. Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2017
SEMESTER VI - PHYSICS
PHY6CP - COMPUTATIONAL PHYSICS

Time: Three Hours   **Maximum Marks: 60**

PART A

I.   Answer all questions. Each question carries 1 mark.

1.   What is an assembler?
2.   What is a flag?
3.   Define T state.
4.   What do you mean by objects in Cpp?
5.   Define break statement.
6.   What is a cache memory?
7.   Define trapezoidal rule.
8.   Write down Runge Kutta second order formula.

                                                (8x1=8)

PART B

II.   Answer any six questions. Each question carries 2 marks.

9.   Differentiate between program counter and stack pointer.
10.   What are different control signals in 8085?
11.   Mention the use of HOLD and HLDA lines?
12.   What is an instruction cycle?
13.   What is a friend function?
14.   What is an exit control loop?
15.   What are constructors and destructors?
16.   Distinguish between static RAM and dynamic RAM.
17.   List the advantages of compact disc over floppy disk.
18.   Write an algorithm for Euler's method.

                                                (6x2=12)

PART C

III.   Answer any four questions. Each question carries 4 marks

19.   Write an assembly language program to find the sum of two 8 bit numbers.
20.   Write about the addressing modes of 8085 instruction set.
21.   Explain address multiplexing in 8085 microprocessor.
22.   Distinguish between primary memory and secondary memory.
23.   Explain the algorithm for Simpson's 1/3 rule.

24. Solve $\frac{dy}{dx}$ =2x+y; y(1) = 2 by second order Runge - Kutta method at x =1.2.

(4x4=16)

PART D

IV. Answer any two questions. Each question carries 12 marks.

25. Write a program in Cpp to multiply two matrices.
26. Explain different types of instructions in 8085 microprocessor.
27. Write down the algorithm for Newton- Raphson method and solve the equation f(x) = x^3+3x-7=0.
28. Discuss the user defined data types structure and class in detail.

(2x12=24)