[This question paper contains 2 printed pages.]

Sr. No. of Question Paper : 8406 **C** **Roll No.....**

Unique Paper Code : 222303

Name of the Paper : PHHP-308 – Microprocessor and Computer Programming (P)

Name of the Course : B.Sc. (Hons.) Physics, Part II

Semester : III

Duration : 1 Hour

Maximum Marks : 20

Instructions for Candidates

1. Write your Roll No. on the top immediately on receipt of this question paper.
2. Attempt any **twenty** questions.
3. All questions carry equal marks.
4. Calculators are not allowed.

1. If x=6 predict the values of x and y in the following :

   y = (++x) + (++x);

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2. If a=4, b=3 in a C++ program, what will be the value of a && b ?

3. Predict the output of the following code segment :

```
int n=7;
n*=2;
cout<<n;
```

4. Write the corresponding C++ expression for the following mathematical expression :

$$2 - ye^{2y} + 4y$$

5. Write the syntax for switch statement.

6. What is the difference between break statement and continue statement ?

7. What do you mean by global and local variables ?

8. What will be the result of following expression if i = 1 0 :

   20%i

9. What is an array? What are the types of an array ?

10. Write a block of C++ code that has the same effect as the statement :

    n=100+m++

    without using post-increment operator.

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11. Write a single C++ statement that decrements the variable n and then adds it to total.

12. What's wrong with these declarations int first=22.0, 21ast=99;

13. Write an instruction to make all bits of accumulator zero.

14. Write a pair of instructions to divide 0C(H) by 02(H) using RAR instruction. Assume CY flag reset.

15. Write instructions to set zero the contents of memory locations 2005(H) and 2006(H) using INX instruction ?

16. What does the instruction PUSH H mean ? Give an example.

17. Let the accumulator contain 0A(H) and register C contain 05(H). Which flag(s) will set/reset when CMP C is executed ?

18. What are the contents of address bus when microprocessor is reset ?

19. Describe with example the syntax and use of the instruction XTHL ?

20. In the following program segment find out the number of times the JNZ instructions at '1' and at '2' cause the control to be transferred to *loop* :

```
      MVI H, 02(H)
      MVIL, 06(H)
loop: DCR L
   1: JNZ loop
      DCR H
   2: JNZ loop
```

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21. What are the address modes of the following instructions :
(a) PUSH B (b) ADC C

22. Let the register pair DE contain 0008(H) which itself contains 08(H), and register pair BC contain 0009(H). What does LDAX D and thereafter STAX B do ?

23. What is the bit pattern of the flag register when we add 3A(H) with 60(H) ?

24. Enumerate the similarities and dissimilarities between CMP C and SUB C instructions.

25. Establish what does the following program segment do ? Assume 0A2A(H) contain 0A(H) and 0A2B(H) contain 0B(H) :

```
LXI H, 0A2A(H)
LXI D, 0A2B(H)
MOV A,M
XCHG
ADD M
```