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Roll No. : ☐☐☐

HALF-YEARLY EXAMINATION. (2022-23)

SUBJECT : COMPUTER SCIENCE

CLASS : XI

Max. Marks : 70 Time Allowed : 3 hours

General Instructions:

1. This question paper contains three sections, Section A to C.
2. All questions are compulsory.
3. Section A have 11 questions carrying 1 mark each.
4. Section B has 16 Short Answer type questions carrying 2 marks each.
5. Section C has 9 long Answer type questions carrying 3 marks each.
6. *All programming questions are to be answered using Python Language only.*

SECTION A

1. State True or False
   "Python is a case sensitive language." 1
2. Fill in the blank from given options:
   _____ KB = 2 MB 1
   (a) 1024 (b) 2048
   (c) 2000 (d) 2024
3. State first and second De-Morgan's Theorem. 1
4. Expand the following. ½ + ½
   (a) ISCII (b) EPROM
5. What is Unicode encoding system? 1
6. Which of the following is an invalid datatype in Python? 1
   (a) Set (b) None
   (c) Integer (d)Real
7. What is Booting? 1

8. Which of the following statement(s) would give an error after executing the following code? 1

```
S="Welcome to class XII"          # Statement 1
print(S)                         # Statement 2
S="Thank you"                    # Statement 3
S[0]= '@'                        # Statement 4
S=S+"Thank you"                  # Statement 5
```

(a) Statement 3 (b) Statement 4

(c) Statement 5 (d) Statement 4 and 5

9. What will the following expression be evaluated to in Python? 1

```
print(15.0 / 4 + (8 + 3.0))
```

(a) 14.75 (b) 14.0

(c) 15 (d) 15.5

10. What is the difference between "/" and "%" operator? Explain with example. 1

Q11 is ASSERTION AND REASONING based questions. Mark the correct choice as

1. Both A and R are true and R is the correct explanation for A
2. Both A and R are true and R is not the correct explanation for A
3. A is True but R is False
4. A is false but R is True

11. Assertion (A):- If the condition of the while loop is initially false, the body is not executed even once.

Reasoning (R):- During execution of while loop, body of the loop executed only when loop condition gets true . 1

SECTION B

12. Differentiate between RAM and ROM. 2
13. Write down any four features of python. 2
14. Differentiate between compiler and interpreter. Write any two difference. 2
15. Convert the following number system. 1+1

(a) $(ABC.72E)_{16}$ to $(?)_2$

(b) $(11001011)_2$ to $(?)_{10}$

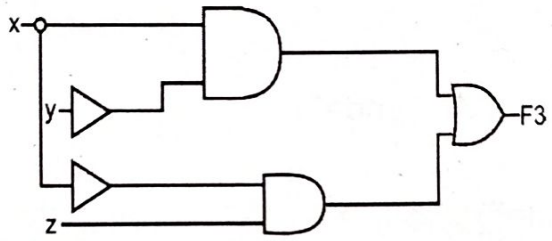
16. What is utility software? Write any two utility software with their use. 2

17. Define Operating system software? Write any two functions of operating systems. 2

18. What are Universal Gates? Write examples with their symbol and truth table. 2

19. Draw the logic circuit diagram for the function f(x,y,z) = xy+xy'+x'z. 2

20. Identify the value of F3: 2



21. Rewrite the following code in python after removing all syntax error(s).
Underline each correction done in the code. 2

```
30=To
for K in range(0, To)
IF k%4==0:
print (K*4)
Else:
print (K+3)
```

22. Change the following python code using while loop which produces same output as with for loop : 2

```
for x in range(10,20):
    if (x%2==0):
        print(x)
```

23. Differentiate between syntax error and semantic error with example. 2

24. Find the output of following python code : 2

```
x,y=7,2
x,y,x=x+1,y+3,x+10
print(x,y)
```

25. Write following arithmetic expressions using operators in Python: 2

(a) $C=\frac{a+b}{2a}$ (b) $x=a^3 + b^3 + c^3$

(c) $A=\pi r(r+h)^2$ (d) $x=a^{34}$

26. Predict the output of the following code fragment- 2

```
x = 1
if x>3:
    if x>4:
        print("A", end='')
else:
print("B", end='')
elif x<2:
if (x!=0):
    print("C", end='')
print("D")
```

27. What are mutable and immutable data types? Explain with examples.2

SECTION C

28. What are functional units of computer? Explain using block diagram.3
29. Define the following terms : 3
    (a) ASCII (b) Application Software (c) Assembler
30. What do you mean by XOR gate? Explain XOR gate, giving its truth table, expression and circuit diagram for two inputs. 3
31. Draw a Flowchart to find the smallest among three accepted numbers.3
32. Write a python program to input a number and finds its factorial.3
33. Define the following : 3
    (a) Keywords (b) Identifiers (c) Unary Operators
34. Write a python program to input a number from user to check and print whether it is a PRIME Number or not. 3
35. Write a python program to calculate **compound** simple interest after taking the principle, rate and time. 3
36. Write a python program to find the sum of first n odd numbers. 3