

Roll No. _____

Code : 112021 CS-A

Please check that this question paper contains 34 questions and 8 printed pages.

CLASS-XI
COMPUTER SCIENCE (083)
ANNUAL EXAM (2020-21)

Time allowed : 3 hours

Maximum Marks : 70

General Instructions :

1. *This question paper contains two parts A and B. Each part is compulsory.*
2. *Both Part A and Part B have choices.*
3. *Part-A has 2 sections :*
 - (a) *Section-I is short answer questions, to be answered in one word or one line.*
 - (b) *Section-II has two case studies questions. Each case study has 4 case-based sub-parts. An examinee is to attempt any 4 out of 5 sub-parts.*
4. *Part-B is Descriptive paper.*
5. *Part-B has three sections :*
 - (a) *Section-I is short answer questions of 2 marks each in which two questions have internal options.*
 - (b) *Section-II is long answer questions of 3 marks each in which two questions have internal options.*
 - (c) *Section-III is very long answer questions of 5 marks each in which one question has an internal option.*
6. *All programming questions are to be answered using Python language only.*

Part-A

Section-I

Select the most appropriate option out of the options given for each question. Attempt any 15 questions from question no. 1 to 21.

1. Identify and write name of the type and of software : 1

CAD/CAM, Antivirus

OR

Data entered through input device is temporarily stored in _____ memory and for permanent storage and future use it is stored in _____ memory.

2. Do the following conversion : 1

$$(110110111.100010)_2 = (\quad \quad \quad)_8$$

OR

Do the following conversion :

$$(92.75)_{10} = (\quad \quad \quad)_2$$

3. Name the only encoding standard that ensures that you can retrieve or combine data using any combination of languages. 1

OR

While processing CPU stores data and instructions in its local memory. Identify the local memory.

4. Perform addition of following binary numbers : 1

(11001011) and (1100001011)

5. Identify the keywords in Python from the following : 1

print, range, while, int

OR

Identify following types of operators :

and, **

6. Predict the output of the following : 1

```
>>>a=(0,11,22,33,44,55,66,77,88,99)
```

```
>>>print (a[1:7:3])
```

OR

Predict the output of :

(i) 'Peaceful Earth'.find('e')

(ii) A = 'Computer 4 every 1'
print(A[8*3//2])

7. Predict the output of the following : 1

```
>>>a=[0,11,22,33,44,55,66,77,88,99]
```

```
>>>print (a[0:7:4])
```

OR

Identify the output of both the expressions :

(i) `math.fabs(math.ceil(-6.4))`

(ii) `math.ceil(math.fabs(-6.4))`

8. `A=2.0` 1

`B=3.4`

`C=4.8`

`print (((A-B)<(B-C)) == ((A-B)>(B-C)))`

9. Write following expression in Python : 1

$$\frac{2}{3} (b^2 + 2.c.d)$$

10. Raunak has initialized a variable with some value. Help him to identify its data type. 1

OR

Identify the immutable data types in Python given below :

Lists, string, tuple, dictionary

11. Give full form of IPR. 1

12. Explain the term plagiarism. 1

13. Explain the term cyber forensics. 1

14. Mishit has noticed that whatever conversation she had with her mother is being heard secretly by someone. Identify the cyber crime attack she is facing. 1

15. Rakesh is a cricket player and his team lost in a match. Now his friends keep sending him text messages and abusive text blaming him for the team's loss and keep threatening him to leave the team. They have also uploaded his funny pics with abusive text on the social media. Rakesh is afraid of telling this to his coach and parents and is feeling very depressed. 1

Rakesh is facing the problem of _____. (name the cyber threat)

Section-II

Both the case study based questions are compulsory. Attempt any 4 sub-parts from each question. Each question carries 1 mark.

16. Prashant has purchased a new computer and a smart phone. The smart phone is well equipped with all the latest features. His sister has to attend online classes and therefore he offers his smartphone to her for attending the online classes. They often receive many notes online and they need to submit many assignments. His assignment file size is quite large and he need to reduce it. Every time his PC/mobile shows some problem he boots his PC again. 4
- (i) Suggest a utility software to reduce the file size of his assignment.
 - (ii) Identify the type of memory in which the downloaded data gets stored.
 - (iii) Suggest an output device that will help them have a hard copy of their notes in computer/mobile.
 - (iv) Explain the term booting.
 - (v) Suggest an input device that he should attach to his PC so that his video is also visible to his teacher while taking classes.
17. Raunak has sold his computer and purchased a new one. He wants to use open source operating system. After a few days he noticed that his computer has slowed down and started showing unwanted notifications. These pop up notifications often drive him to fake websites. He noticed a list of financial transactions not done in his bank statement. 4

Based on the above, answer any four of the following :

- (i) Name the term used for properly disposing off used computer hardware.
- (ii) Suggest an open source operating system for his computer.
- (iii) Identify the reason of slowing down of computer.
- (iv) Name the act of gaining access to someone's personal or financial information and use his identity for fraud.
- (v) Identify the crime in which the targets are contacted by email/text messages by someone posing as a legitimate site to gain personal details of user.

Part-B

Section-I

18. Draw circuit diagram of following : 2
 $(A.B') + A'.C$

OR

Prove the following using truth tables :

$$A+A'B = A + B$$

19. Identify and underline errors in the following code and rewrite the corrected code: 2
`n=Input(n, 'Enter a value :')`

For a in range(n):

if a=n

print ("Found")

20. Predict the output for the following code : 2

for i in range(1,11,3):

i+i+2

print (i, '#')

OR

Predict the output of the following code :

`s1=["This", "morning", "we", "will", "move", ["to", "a"], "new", "hillside"]`

`print(s1[len(s1)-3 :len(s1)])`

21. Predict the output : 2

`list1=[50, 40, 30, 20, 10]`

`l3=list1.copy()`

`l2=[50]`

for i in l3:

l2.append(l3.pop())

print(l2)

22. Differentiate between append() and extend() functions of strings in Python with example. 2

23. WAP in Python to input an integer from the user and divide the integer with the total number of digits in the same integer. 2
24. Arrange the following Python expressions in ascending order : 2
 2^{3^2} , 3^{2^2} , $(2^3)^2$, 2^{2^3}
25. Give any two disability issues faced while teaching computers in classroom. 2
26. Give any two impacts of technology on societal issues. 2
27. Give any two measures that can be used to secure data. 2
28. Write a program in Python to accept a string from the user and display all the words of minimum length 4. 3

OR

Write a program in Python to accept a string from the user in small letters and display complete string with every odd index element in uppercase and element at even index position in lowercase.

29. Consider the code given below and predict the expected output on execution. Specify the minimum and maximum value of wish import random as r. 3

```
City = ["ENG", "CHE", "PHY", "CSC", "MATH"]
```

```
wish = 0
```

```
for i in range(0, 3):
```

```
    wish = r.randint(0, 2) + 1
```

```
    print(City[wish], ":", end = "")
```

(i) CHE :CHE :CSC :

(ii) ENG :PHY :CHE :

(iii) PHY :PHY :CHE :

(iv) PHY :CSC :CHE :

30. Convert the following loop into while loop : 3

```
n=100
```

```
s=-2
```

```
for I in range (5,n,5):
```

```
    t=1*s
```

```
    s=s-i
```

OR

What is the output produced by the following code ?

```
x=2
while x<=5:
    if x>3:
        if x > 4:
            print ('A',end='#')
        else:
            print('B',end='$')
    elif x<2:
        if (x!=0):
            print('C', end='@' )
        print('D')
x=x+1
```

31. Write a flow chart to accept a number and display sum of square of its individual digits. 3
[for example : if user enters 123 then output should be $1^2 + 2^2 + 3^2 = 14$]

Section-II

32. Write a program in Python to accept 10 key value pairs of course name and strength of students in college A in a dictionary. Make sure that every key entered by user is different. In case the user enters a repeated key then simply add the new value to the existing key value. 5

OR

Give Python commands for the following : 1+2+2

- (i) Create an empty dictionary 'Cricket'
- (ii) Command to add n number of key value pairs in a dictionary 'Cricket'
- (iii) Command to search for a key 'k' in the dictionary 'Cricket' and display its corresponding value and display an appropriate message.

33. Write a code in python to accept a number of Zones of Edutech from the user. The program should store sales values if each deptt in the list.

Program is expected to : 5

- (i) accept the sales one by one from the user and add it at the beginning
- (ii) find the average of sales in the list
- (iii) sort the sales values within the list
- (iv) should display the how many sales values are same as the average sales value appears in the list.

For example : it list entered by the user is

[1000,2000,4,000,3000,4000,2000,4000,5000,2000,3000]

then the average of the elements is 3000 and it should display that average value 3000 appears 2 times in the list.

34. Write a menu driven program in Python to find area of a garden in following shapes:

- rectangle , 5
- square
- circle

Program is required to calculate and display area of garden of selected shape.

(area of rectangle=length × breadth, area of square = side × side, area of circle = $\frac{22}{7} \times \text{radius}^2$)

Also allocate the garden categories as :

Large If the area is greater than 4000 sq. feet

Medium : If the area is greater than or equal to 3000 ft and less than 4000 sq. feet.

Small : If the area is less than 3000 sq. feet.

□□□