



1st Unit Test

Subject : Informatics Practices(065)

Class-XII

Full Marks : 50

Time: 2 Hours

SECTION - I

ATTEMPT ANY 11 QUESTIONS FROM QUESTIONS 1 TO 13 1X 11=11

1.State whether True or False :

- i. Star topology is more reliable than mesh topology
- ii. IPR is the right given to users those who buy original products

2. Write the expand form of Wi-Fi.

3.The result of arithmetic operation between Series of different index will result in _____

- (a) Error (b) Wrong Output (c) NaN (d) Null

4. Consider the following series S1

2	50
4	30
6	70
8	60

Write command to print values greater than 50

5,Name the network device that can connect network of different protocols.

6. What is the function of MODEM?

7.A hub can be replaced with a switch.” Write True or False. Justify.

8. Which amongst the following is not an example of unguided media?

- (a) Fiber Optic Cable (b) Microwave (c) Radio Frequency (d) Satellite

9. Which is not an example of topology?

- (a) Tree (b) Star (c) Bus (d) Branch

10. Given a Pandas Series SQ, the command which will display the first 4 rows is _____.

- (a) print(SQ.head(4)) (b) print(SQ.Head(4)) (c) print(SQ,heads(4)) (d) print(head(4))

11. What is the following address called:

208.77.188.166

12. Write the correct output on execution of the following Pandas code:

```
import pandas as pd
df=pd.DataFrame([ („Om“ ,93),(„Jay“ ,91)],columns=[„Name“ , „Mark“])
print(df[„Name“])
```

13. Two doctors are exchanging files using Bluetooth. What type of network will form

- (a) LAN (b) MAN (c) WAN (d) PAN

SECTION -II

CASE STUDY BASED QUESTIONS . ATTEMPT ANY FOUR SUB PARTS FROM EACH QUESTION.

EACH SUB QUESTION CARRIES 1 MARK

1X4= 4

14. Consider the following DataFrame std and answer any four from (i) to (v)

	IP	Eco	Eng
Rohit	45	39	48
Suman	23	29	40
Nitish	30	32	36
Ramesh	41	45	42

(a) Which among the following option will add a new column total with sum of marks

- `std[Total]=IP+CHE+PHY`
- `std[Total]=sum(IP,CHE,PHY)`
- `std[Total]=std[IP]+std[CHE]+std[PHY]`
- `std[Total]=std[IP+CHE+PHY]`

(b) Chandamita maam needs to print details in the descending order of total marks. Help her to identify the correct set of statement/s from the given options :

- `print(std.sort_values())`
- `print(std.sort_values(ascending=False))`
- `print(sort_values(std))`
- `print(sort_values.std(descending))`

(c) Which of the following statement/s will delete last row ?

- `del std['Ramesh ']`
- `std.pop('Ramesh ')`
- `std.drop('Ramesh ', inplace=True)`
- `pop std['Ramesh ']`

Choose the correct option:

- both (i) and (iii)
- only (iii)
- (i), (ii) and (iii)
- Only (i)

(d) Which of the following command will display the number of dimensions in the DataFrame?

- `print(std.shape)`
- `print(std.ndim)`
- `print(std.size)`
- `print(std.dimensions)`

(e) Select correct output of the given Statement

```
print(std.iloc[2:3])
```

- None
- | | | | |
|--------|----|----|----|
| Nitish | 30 | 32 | 36 |
| Ramesh | 41 | 45 | 42 |
- | | | | |
|--------|----|----|----|
| Nitish | 30 | 32 | 36 |
|--------|----|----|----|

d. Suman	23	29	40
Nitish	30	32	36
SECTION III (2 MARKS QUESTIONS)			ATTEMPT ANY 8
			2 x 8 =16
15. Expand the following terms related to Computer Networks:			
a. HTTPS	c. IMAP		
b. TCP/IP	d. URL		
16. What do you mean by WWW? How it's different from Internet?			
17. Write one advantages and one disadvantage of star topology over ring topology			
18. Following is a MAC address			
30-65-EC-6F-C4-58		Identify its different parts	
19. Difference between email and chat?			
20. Name the devices .			
(a) It regenerate the signal.			
(b) It stands for modulation and demodulation			
21. Create a series that depicts Month as index and sales as values from two different lists			
Month =['jan', 'feb', 'mar', 'apr', 'may']			
Sales =[4500, 2480, 5700, 5621, 3214]			
22. Write any four features of pandas.			
23. Draw pattern of ring and star topology for one server connecting 5 clients.			
24. Difference between Router and Bridge.			
SECTION IV			3 MARKS QUESTIONS
25. Write any three networking component with their functions.			3
26. Create a series to store marks of any five students with index ['a', 'b', 'c', 'd', 'e']			3
import pandas as pd			
D=pd.series([10,15,20,25,30])			
What output will display by the following statements			
(i)	D. index	(ii)	D. Shape
(ii)	D. itemsize	(iv)	D. empty
	D. values	(vi)	D. hasnans
27. Consider the following Series object S			1 x 3 = 3
0	0.4758		
1	0.2656		
2	0.8637		
3	0.6541		
What will be return by the following statements			
(a)	S*100	(b)	print(S>0)
(c)	S3=pd.Series(S)+3		

SECTION –V

5 MARKS QUESTIONS

28. Consider the following DataFrame ndf :

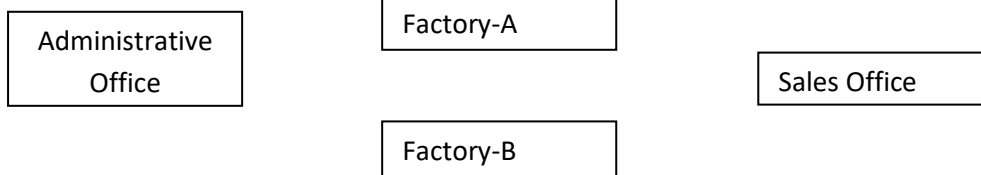
1 x 5 =5

R_No	Name	Theory	Practical
21	Arun E D	67	28
22	Anu M N	65	28
23	Benit Anto	NaN	19
34	Cilona David	66	28

Perform the following operations on the DataFrame

- 1) Add both the marks of a student and assign to column "Total"
- 2) Add a new row with values in all fields
- 3) Display the last two row of the dataframe.
- 4) To count the number of Value present in Theory column
- 5) Display Name column of the data Frame

29. Ishika Industries has set up its new production unit and sales office at Ranchi. The company compound has 4 buildings as shown in the diagram below:



Distances between these buildings are as follows:

Administrative Office to Factory A 150 m

Factory A to Factory B 50 m

Factory B to Sales Office 100m

Sales Office to Administrative office 200m

Administrative Office to Factory B 125 m

Number of Computers in each of the buildings is follows:

Administrative Office - 15

Factory A – 25

Factory B - 18

Sales Office – 15

- a. Suggest the most appropriate topology of the connection between the offices. 1
- b. Suggest a cable layout of connections between the buildings so that each building is directly connected to Administrative Office. 1
- c. Suggest the most suitable place (i.e. building) to house the server of this production unit with a suitable reason. 1
- d. Suggest the placement of the following devices with justification:(i) Repeater(ii) Hub/Switch 1
- e. The Administrative office of this unit is to be linked with the head office situated in Patiala (Punjab).

What will be the most economical way to do this? Justify your answer.

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