



COMMON PRE-BOARD EXAMINATION
INFORMATICS PRACTICES-Code No. 065



Marking Scheme
Class-XII-(2025-26)

SET: 2

| Q. No | Section-A (21 x 1 = 21 Marks) | Marks |
|--------------|---|--------------|
| 1. | (C) To return the number of characters in a given string. | 1 |
| 2. | (B) Passive digital footprint | 1 |
| 3. | (C) The result contains NaN for non-overlapping indices. | 1 |
| 4. | (C) The number of columns in a table. | 1 |
| 5. | (B) Static Web Page | 1 |
| 6. | False | 1 |
| 7. | (C) 2 | 1 |
| 8. | (C) Copyright Infringement | 1 |
| 9. | (B) pd.DataFrame(data) | 1 |
| 10. | (C) Hub | 1 |
| 11. | (C) To modulate and demodulate signals for transmission over telephone lines. (| 1 |
| 12. | (B) To extract a substring from a given string. | 1 |
| 13. | (D) columns | 1 |

| 14. | (C) df[['Name', 'Marks']] | 1 | | | | | | | | |
|--|---|-----------------|------------------|---|--|--|---|--|--|---|
| 15. | (C) SELECT COUNT(DISTINCT City) FROM Customers; | 1 | | | | | | | | |
| 16. | (D) df[df['Score'] > 90] | 1 | | | | | | | | |
| 17. | (C) Plagiarism | 1 | | | | | | | | |
| 18. | (D) WHERE | 1 | | | | | | | | |
| 19. | (D) df.iloc[0, 1] | 1 | | | | | | | | |
| | Direction : For questions 20 and 21, two statements are given: one labeled Assertion (A) and the other labeled Reason (R). Choose the correct option. (A) Both A and R are True, and R is the correct explanation of A. (B) Both A and R are True, but R is not the correct explanation of A. (C) A is True, but R is False. (D) A is False, but R is True. | | | | | | | | | |
| 20 | (B) Both A and R are True, but R is not the correct explanation of A. | 1 | | | | | | | | |
| 21 | (C) A is True, but R is False | 1 | | | | | | | | |
| Q No. | Section-B (7X2 = 14 Marks) | Marks | | | | | | | | |
| 22. | <p>Rajesh, a freelance website developer, has been tasked with designing several web pages for a bookshop. Help Rajesh decide whether to create static or dynamic web pages by clearly outlining at least two points of difference between static and dynamic web pages.</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;">Static Web page</th> <th style="width: 50%;">Dynamic Web page</th> </tr> </thead> <tbody> <tr> <td>A static web page is a web page which displays fixed content, and it gets delivered to user's browser exactly as created.</td> <td>A dynamic web page is a web page which displays dynamic content every time it is loaded.</td> </tr> <tr> <td>When a server receives a request for a static web page, then the server sends the response to the client without doing any additional process.</td> <td>When a server receives a request for a dynamic web page, then the server sends the response to the client after processing server side scripts.</td> </tr> <tr> <td>Does not require any access of databases to display content.</td> <td>Requires the access of Databases which enables the dynamic page content to be generated from information stored in the database.</td> </tr> </tbody> </table> | Static Web page | Dynamic Web page | A static web page is a web page which displays fixed content, and it gets delivered to user's browser exactly as created. | A dynamic web page is a web page which displays dynamic content every time it is loaded. | When a server receives a request for a static web page, then the server sends the response to the client without doing any additional process. | When a server receives a request for a dynamic web page, then the server sends the response to the client after processing server side scripts. | Does not require any access of databases to display content. | Requires the access of Databases which enables the dynamic page content to be generated from information stored in the database. | 2 |
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| | | | | | | | | | | | | | | | | |
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| | <p>Priyanka, a beginner in IT field has just started learning web technologies. Help her in understanding the difference between website and web pages with the help of a suitable general example of each.</p> <table border="1"> <tr> <td>Web page</td> <td>Web site</td> </tr> <tr> <td>Single document on the Internet</td> <td>A collection of related web pages linked together under same domain</td> </tr> <tr> <td>Development requires minimum amount of time</td> <td>Development takes relatively a long time</td> </tr> <tr> <td>Web page has content about a single entity</td> <td>Web site has content about several entities</td> </tr> <tr> <td>e URL of the web page depends on website</td> <td>URL of website does not depends upon webpage</td> </tr> <tr> <td>URL has an extension Eg. indian.org/syllabus.html</td> <td>No extension is used in URL of a website Eg. indian.org</td> </tr> <tr> <td>It is the content that is to be displayed on a website</td> <td>Website acts like a container that holds web pages within it.</td> </tr> </table> | Web page | Web site | Single document on the Internet | A collection of related web pages linked together under same domain | Development requires minimum amount of time | Development takes relatively a long time | Web page has content about a single entity | Web site has content about several entities | e URL of the web page depends on website | URL of website does not depends upon webpage | URL has an extension Eg. indian.org/syllabus.html | No extension is used in URL of a website Eg. indian.org | It is the content that is to be displayed on a website | Website acts like a container that holds web pages within it. | |
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| It is the content that is to be displayed on a website | Website acts like a container that holds web pages within it. | | | | | | | | | | | | | | | |
| 23. | <ul style="list-style-type: none"> i. SELECT (INSTR('WATERBOTTLE','BOT')); ii. SELECT DAYNAME("2020-09-12"); | 2 | | | | | | | | | | | | | | |
| 24. | <p>FOSS stands for Free and open source software (FOSS) , software available freely for anyone and their source code is also open for anyone to access, modify, correct and improve.</p> <p>Some of the popular FOSS tools are office packages, like Libre Office, browser like Mozilla</p> | 2 | | | | | | | | | | | | | | |
| 25. | <pre> studname age points 0 Riya 25 85 2 Varun 22 92 OR a NaN v -1.0 w 2.0 x NaN y 2.0 z 8.0 dtype: float64 </pre> | 2 | | | | | | | | | | | | | | |

| 26. | <p>(A) If a value corresponding to a column is not present, it is considered to be a missing value. A missing value is denoted by NaN..</p> <p>Fillna(), dropna() (1mark)</p> <p style="text-align: center;">OR</p> <p>(B) loc attribute is used to access group of rows and columns by corresponding row/column label(s). Eg. A.loc['stude1':stud4', 'm1:m4]</p> <p>iloc attribute iloc attribute is used to access group of rows and columns by corresponding row/column index. Eg A.iloc[3,2]</p> | 2 | | | | | | | | | | | | |
|---------------|--|---------------|----------|--|--|-------|---------|------|----------|-----|----------|-----|----|---|
| 27. | <p>List any two health hazards caused due to the overuse of technology.</p> <p>Interacting in an improper posture can be bad for us — both physically, and mentally. Spending too much time on Internet can be addictive and can have a negative impact on our physical and psychological well being. Eye strain is a symptom commonly complained by users of digital devices. Overuse of keyboards (be it physical keyboard or touchscreen-based virtual keyboard) not aligned ergonomically, can give rise to a painful condition of wrists and fingers, and may require medical help in the long run (Any two of these)</p> | 2 | | | | | | | | | | | | |
| 28. | <p>Abhay wants to Complete the given Python code: to read data from the CSV file 'data.csv' from D drive into a DataFrame df and display the first 5 rows.</p> <pre>import <u>pandas</u> as pd df = pd.read_csv(<u>_D:\data.csv</u>) print(df.head(<u>5</u>))</pre> <p>(1/2 mark each)</p> | 2 | | | | | | | | | | | | |
| Q No | Section-C (4X3 = 12 Marks) | Marks | | | | | | | | | | | | |
| 29. | <p>Write SQL commands to</p> <p>a) CREATE TABLE PRODUCT(PCODE VARCHAR(4) PRIMARY KEY, PNAME VARCHAR(20),UPRICE DECIMAL(8,2),D_OF_EXP DATE); (2 MARKS)</p> <p>b) INSERT INTO PRODUCT VALUES(' P01','Shampoo',85.50,'2025-10-12'); (1 MARK)</p> | 2+1 | | | | | | | | | | | | |
| 30. | <p>i) SELECT BOOK_NAME,AUTHOR_NAME FROM BOOK WHERE PRICE BETWEEN 350 AND 600; ii) SELECT COUNT(DISTINCT TYPE) FROM BOOK; iii) UPDATE BOOK SET PRICE=PRICE+50 WHERE TYPE='FICTION'; (1 mark each)</p> <p style="text-align: center;">OR</p> <p>Consider the two tables DOCTORS and PATIENTS:</p> <table border="1" data-bbox="191 1885 997 1992"> <thead> <tr> <th colspan="4">TABLE:DOCTORS</th> </tr> <tr> <th>DOCID</th> <th>DOCNAME</th> <th>DEPT</th> <th>OPD_DAYS</th> </tr> </thead> <tbody> <tr> <td>101</td> <td>M PANDAY</td> <td>ENT</td> <td>US</td> </tr> </tbody> </table> | TABLE:DOCTORS | | | | DOCID | DOCNAME | DEPT | OPD_DAYS | 101 | M PANDAY | ENT | US | 3 |
| TABLE:DOCTORS | | | | | | | | | | | | | | |
| DOCID | DOCNAME | DEPT | OPD_DAYS | | | | | | | | | | | |
| 101 | M PANDAY | ENT | US | | | | | | | | | | | |

| | | | | | |
|------|--|----------------|--------------|-----|-------|
| | 102 | G P GUPTA | PAED | MWF | |
| | 201 | C K SHARMA | ORTHO | MWF | |
| | TABLE:PATIENTS | | | | |
| | PATNO | PATNAME | DOCID | | |
| | 1 | NEERAJ | 101 | | |
| | 2 | MOHIT | 201 | | |
| | 3 | RAGINI | 101 | | |
| | 4 | MANOJ | 102 | | |
| | 5 | NANDINI | 201 | | |
| | Write the SQL queries for the following: | | | | |
| | I) SELECT PATNO,PATNAME,DOCNAME FROM PATIENTS,DOCTORS WHERE PATIENTS.DOCID=DOCTORS.DOCID; | | | | |
| | II) ALTER TABLE PATIENTS ADD DATE_OF_ADM DATE; | | | | |
| | III) SELECT * FROM DOCTORS ORDER BY DOCTo sort the records of DOCTORS table in descending order. | | | | |
| | (1 mark each) | | | | |
| 31. | i. cyber bullying and cyber stalking. ii. He must immediately bring it into the notice of her parents and school authorities. And she must report this cyber crime to local police with the help of her parents. iii. Yes. The Information Technology Act, 2000 (also known as ITA-2000, or the IT Act) is the primary law in India dealing with cybercrime and electronic commerce. iv) (1 mark for each answer) | | | | 3 |
| 32. | import pandas as pd country = {'India': 'New Delhi', 'Russia': 'Moscow', 'Japan': 'Tokyo', 'Switzerland': 'Bern'} S = pd.Series(country) print(S) (1 mark for import and print, 2 marks for Series creation) OR import pandas as pd D={'Name': ['Manpreet', 'Kavya', 'Manu', 'Ria'], 'Physics': [70, 60, 76, 89], 'Chemistry' : [30, 70, 50, 65]} DF=pd.DataFrame(D) print(DF) (1 mark for import and print, 2 marks for Dataframe creation) | | | | 3 |
| Q No | Section-D (2X4 = 8 Marks) | | | | Marks |
| 33. | import matplotlib.pyplot as plt #Statement-1 Teams = ['Team A', 'Team B', 'Team C', 'Team D', 'Team E'] Scores = [50, 43, 75, 80, 40] plt.bar(Teams,Scores,label='IT QUIZ') #Statement-2 plt.xlabel('Quiz Teams') | | | | 4 |

```
plt.ylabel('Scores')
plt.title('Final Score Points') #Statement-3
plt.savefig('quiz_result.png') #Statement-4
plt.legend()
plt.show()
(1 mark each)
```

34.

- i) SELECT CARNAME,ROUND(COST,1) FROM CARMARKET;
- ii) SELECT LOWER(CARNAME),LOWER(COMPANY) FROM CARMARKET WHEE DOM LIKE '2020%';
- iii) SELECT CARNAME,COLOUR,INSTR(COLOUR,'E') FROM CARMARKET;
- iv) SELECT COUNT(*) ,COMPANY FROM CARMARKET GROUP BY COMPANY;

OR

Consider the table CLUB.

| Table : CLUB | | | | | |
|---------------------|-------------------|------------|---------------|------------------------|------------|
| COACH_ID | COACH_NAME | AGE | SPORTS | Date_of_joining | PAY |
| 1 | Rajesh | 30 | Karate | 199-08-25 | 1000 |
| 2 | Anuj | 35 | Swimming | 2000-01-05 | 750 |
| 3 | Shuchi | 25 | Basketball | 2005-01-04 | 1200 |
| 4 | Reetika | 28 | Badminton | 2002-08-25 | 1400 |
| 5 | Virendra | 32 | Cricket | 1996-05-17 | 1500 |

What will be the output of the following SQL queries?

- i) SUBSTR(COACH_NAME,2,4), AGE

| | |
|------|----|
| huch | 25 |
| eeti | 28 |
| iren | 32 |

- ii) DAY(Date_of_joining) LEFT(COACH_NAME,3)

| | |
|----|-----|
| 25 | Ree |
|----|-----|

- iii) PAY*0.25+1000

| | |
|------|--|
| 1250 | |
| 1750 | |

- iv) MIN(AGE),SUM(PAY)

| | |
|----|------|
| 25 | 5850 |
|----|------|

Q
No

Section-E (3X5 = 15 Marks)

Marks

35.

Consider the following DataFrame dfn. Write the output of the Python statements

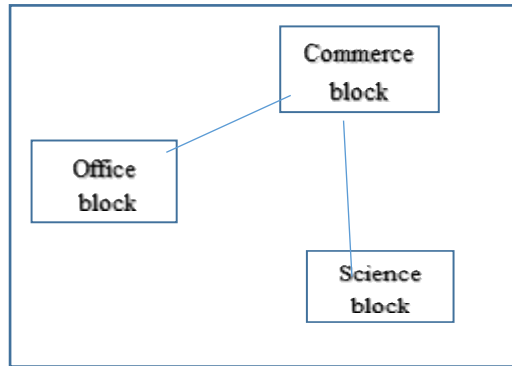
| | A | B | C |
|----------|------|-----|------|
| Order | 450 | 180 | 350 |
| Purchase | 330 | 550 | 610 |
| Sell | 250 | 410 | 380 |
| Target | 1050 | 980 | 1250 |

(a)

| | <table border="0" style="width: 100%;"> <thead> <tr> <th></th> <th style="text-align: center;">A</th> <th style="text-align: center;">B</th> </tr> </thead> <tbody> <tr> <td>Order</td> <td style="text-align: center;">450</td> <td style="text-align: center;">180</td> </tr> <tr> <td>Purchase</td> <td style="text-align: center;">330</td> <td style="text-align: center;">550</td> </tr> <tr> <td>Sell</td> <td style="text-align: center;">250</td> <td style="text-align: center;">410</td> </tr> <tr> <td>Target</td> <td style="text-align: center;">1050</td> <td style="text-align: center;">980</td> </tr> </tbody> </table> <p>b)</p> <table border="0" style="width: 100%;"> <tr> <td>A</td> <td style="text-align: center;">330</td> </tr> <tr> <td>B</td> <td style="text-align: center;">550</td> </tr> <tr> <td>C</td> <td style="text-align: center;">610</td> </tr> </table> <p>(c) dfn.index=['O','P','S','T'] (d) dfn[' D']=[450,760,120,1000] (e) del dfn['B']</p> | | A | B | Order | 450 | 180 | Purchase | 330 | 550 | Sell | 250 | 410 | Target | 1050 | 980 | A | 330 | B | 550 | C | 610 | |
|----------|---|-----|---|---|-------|-----|-----|----------|-----|-----|------|-----|-----|--------|------|-----|---|-----|---|-----|---|-----|--|
| | A | B | | | | | | | | | | | | | | | | | | | | | |
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| A | 330 | | | | | | | | | | | | | | | | | | | | | | |
| B | 550 | | | | | | | | | | | | | | | | | | | | | | |
| C | 610 | | | | | | | | | | | | | | | | | | | | | | |
| 36. | <p>Write suitable SQL query for the following:</p> <ol style="list-style-type: none"> SELECT AVG(TEST_RESULTS) FROM EXAMS; SELECT RIGHT(REGISTRATION_NUMBER,3) FROM VEHICLE; SELECT TRIM(USER) FROM USERS; SELECT MAX(SALARY) FROM EMPLOYEES; SELECT COUNT(*) FROM SUPPLIERS; <p style="text-align: center;">OR</p> <p>Write suitable SQL query for the following:</p> <ol style="list-style-type: none"> SELECT ROUND(PI,2);. SELECT MOD(125,8); SELECT LENGTH("NEW DELHI"); SELECT LEFT("HAKUNA MATATA",5); <p>SELECT TRIM(EMAIL) FROM STUDENTS</p> | | | | | | | | | | | | | | | | | | | | | | |
| 37. | <p>i)</p> <p>Star topology – layout 1</p> <p>Total distance = 90+15=105m</p> <div style="border: 1px solid black; padding: 10px; margin: 10px auto; width: fit-content;"> <p>Freshminds University Anna nagar campus</p> <pre> graph TD Office[Office block] --- Science[Science block] Commerce[Commerce block] --- Science Science --- Science2[Science block] </pre> </div> | | | | | | | | | | | | | | | | | | | | | | |

Bus topology – layout 2

Total Cable length =50+15= 65m



Bus topology is best suited as it has less total cable length.

- i) Suggest the authorities, the cable layout amongst various blocks inside Anna nagar university campus for connecting the blocks.
- ii) The most suitable place to house the server for this university is SCIENCE block as it has most number of computers.
- iii) (b) Switch
iv),WAN
- v) suggest the placement of the following devices with justification
 - a) Repeater - To be placed between Science and Commerce block in layout 1 (star) as distance is >70. Repeater not needed in layout 2.
 - b) b) Modem – To be placed in Science block as it has the server.