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| **HY/IPC/1220A 11/11/2020** | | | | | |
| **HALF YEARLY EXAMINATION (2021-21)** | | | | | |
| **Subject: INFORMATICS PRACTICES**  **Grade: XII** | | | Max.Marks:70 Time:3 Hours | | |
| **Name:** | | | Class: | **Section:** | |
| **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:    1. Section – I is short answer questions, to be answered in one word or one line.    2. 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 the 5 4. Part - B is Descriptive Paper. 5. Part- B has three sections    1. Section-I is short answer questions of 2 marks each in which two questions have internal options.    2. Section-II is long answer questions of 3 marks each in which two questions have internal options.   Section-III is very long answer questions of 5 marks each in which one question has question has internal option. | | | | | |
|  | | **PART - A** | | |  |
|  | | **SECTION - I**  **Attempt any 15 questions from questions 1 to 21** | | |  |
| 1 | | 1. Name the primary law in India dealing with cybercrime and electronic commerce. | | | 1 |
| 2 | | Fill in the blanks :   1. The command used to save a graph on your system 2. plt.save() 3. plt.saveas() 4. plt.savefig() 5. plt.savefigure() | | | 1 |
| 3. | Write the output of the following SQL command.  select truncate(49.88,1);  a. 49.88  b. 49.8  c. 49.0  d. 50 | | | | 1 |
| 4 | Given a Pandas series called S, the command which will display the first 5 rows is .   1. print(S.head()) 2. print(S.Head(5)) 3. print(S.head(5) 4. Both a and c | | | | 1 |
| 5 | Given the following Series S1 and S2:  S1 S2  A 10 A 80  B 40 B 20  C 34 C 74  D 60 D 90  Write the command to find the sum of the squares of corresponding terms of both the series | | | | 1 |
| 6 | Write a suitable Python code to create an empty dataframe. | | | | 1 |
| 7 | To prevent unauthorized access to and / or from the network, a system known as \_\_\_\_\_\_, can be implemented by hardware and / or software. | | | | 1 |
| 8 | In a DataFrame, Axis= 0 represents the elements. | | | | 1 |
| 9 | Which of the following is not an intellectual property?   1. A poem written by a poet 2. An original painting made by a painter 3. Trademark of a Company 4. A remixed song | | | | 1 |
| 10 | For web pages where the information is changed frequently, for example, stock prices, weather information which out of the following options would you advise ?   1. Static web page 2. Dynamic web page Justify your answer. | | | | 1 |
| 11 | The sum ( ) function in MySql is an example of   1. Math function 2. Aggregate functions 3. Group function 4. Both b and c | | | | 1 |
| 12 | \_\_\_\_\_\_\_\_\_\_ method in Pandas can be used to change the index of rows and columns of a Series or Dataframe :   1. rename() 2. reindex() 3. reframe() 4. none of the above | | | | 1 |
| 13 | Consider the following dataframe : student\_df  Name class marks  Anamay XI 95  Aditi XI 82  Mehak XI 65  Kriti XI 45  Write a statement to get the minimum value of the column marks. | | | | 1 |
| 14 | Give any two purpose of cookies. | | | | 1 |
| 15 | Which amongst the following is not an example of open source browser ?   1. Chrome 2. Firefox 3. Safari | | | | 1 |
| 16 | A mail or message sent to a large number of people indiscriminately without their consent is called | | | | 1 |
| 17 | According to a survey, one of the major asian country generates approximately about 2 million tonnes of electronic waste per year. Only 1.5 & of the total e-waste gets recycled. Suggest a method to manage e-waste . | | | | 1 |
| 18 | The command can be used to add rows to a table in SQL. | | | | 1 |
| 19 | Write the SQL command that will display the current time and date | | | | 1 |
| 20 | network device is known as an intelligent hub . | | | | 1 |
| 21. | Receiving irrelevant and unwanted emails repeatedly is an example of \_\_\_\_\_\_ | | | | 1 |
|  | **SECTION -II**  Both the case study based questions (22 & 23 ) are compulsory. Attempt any four sub parts from each question. Each sub question carries 1 mark . | | | |  |
| 22 | Consider the following DataFrame df and answer any four questions from (i)-(v) | | | |  |
| i) | Write down the command that will give the following output.    a.print(df.max)  b.print(df.max()) c.print(df.max(axis=1)) d.print(df.max, axis=1) | | | | 1 |
| ii) | To display the city and temperature   1. print(df[['City','Temperature' ]])   b. print(df['City','Temperature'])  c. print(df(city,temperature)) | | | | 1 |
| iii) | Which of the following statement/s will give the exact number of values in each column of the dataframe?   1. print(df.count())   ii. print(df.count(0))  iii. print(df.count)  iv. print(df.count(axis=’index’))  Choose the correct option:   1. both (i) and (ii) 2. only (ii) 3. (i), (ii) and (iii) 4. (i), (ii) and (iv) | | | | 1 | |
| iv) | Which of the following command will display the column labels of the DataFrame?  a.print(df.columns())  b.print(df.column())  c.print(df.column)  d.print(df.columns) | | | | 1 | |
| (v) | Ms. Sharma, wants to add a new column, Precipitation with the values,10,0,12,13 to the DataFrame. Help her choose the command to do so:  a. df.column=[10,0,12,13]  b.df [’Precipitation’]=[10,0,12,13]  C. df.loc[’Precipitation’]= [10,0,12,13]  d. Both (b) and (c) are correct | | | | 1 | |
| 23 | Select the correct option | | | |  | |
|  | 1. The SQL statement to extract the string ‘Learn’ from ‘Distance Learning’. 2. Select Instr(‘Distance Learning’,’Learn’) 3. Select substr(‘Distance Learning’,’Learn’) 4. Select substr(‘Distance Learning’,’9,5) 5. Select substr(‘Distance Learning’,10,5) | | | |  | |
|  | 1. The SQL statement to display the position of "Learn" in "eLearning". 2. Select Inpos(‘eLearning’.’Learn’) 3. Select instr(‘eLearning’.’Learn’) 4. Select substr(‘eLearning’.’Learn’) 5. Select strpos(‘eLearning’.’Learn’) | | | |  | |
|  | 1. Complete the query **select \_\_\_\_\_\_\_('2020-05-11')+1;** so that it returns 12 2. Month 3. Day 4. Year 5. Dayofweek | | | |  | |
|  | 1. Any String function returns   (a) Only string  (b) Only number  (c) String or number  (d) String, number or date type data. | | | |  | |
|  | 1. INSTR(str,str2) returns the position of the first occurrence of   (a) Str in "MySQL"  (b) Str in str2  (c) str2 in str  (d) str2 in "SQL" | | | |  | |
|  | **Part - B** | | | |  | |
|  | **Section – I** | | | |  | |
| 24 | Consider a given Series , M1:  Marks  Term1 45  Term2 65  Term3 24  Term4 89  Write a program in Python Pandas to create the series. | | | | 2 | |
| 25 | Differentiate between having clause and where clause.  OR  Differentiate between DDL and DML commands with example. | | | | 2 | |
| 26 | Consider an EMP table(Empid,Firstname,lastname).Write the query for the following.   1. Display LastName and Firstname from emp table who have "at" in the second position in their first names 2. Display the Firstname from emp table that are 6 chars long. | | | | 2 | |
| 27 | Consider the following Series object, X  0 1   1. 2 2. 3 3. 4 4. 5 5. Write the single line command which will display the even numbers 6. Write the command to name the series as Numbers. | | | |  | |
| 28 | Consider table player    Give the output   1. Select count(\*) from player; 2. Select count(points) from player; 3. Select avg(points) from player; 4. Select avg(pcode) from player; | | | | 2 | |
| 29 | Consider the following SQL string: “Distance Learning” Write commands to display:  a. “Distance”  b. “Learn”  OR  Considering the string “Impossible” Write SQL commands to display:  a. the position of the substring possible in the string “Impossible”  b. the last 4 letters of the string | | | | 2 | |
| 30 | Consider the following DataFrame, classframe  Rollno Name Class Section CGPA Stream  St1 1 Aman IX E 8.7 Science  St2 2 Preeti X F 8.9 Arts  St3 3 Jacn IX D 9.2 Science  St4 4 Lakshay X A 9.4 Commerce  Write commands to :   1. Add a new column ‘Marks’ to the Dataframe and assign the value CGPA\*100 2. Add a new row with values ( 5 , Mridula ,X, F , 9.8, Science,98) | | | | 2 | |
| 31 | Sutapa received an email from her bank stating that there is a problem with her account. The email provides instructions and a link, by clicking on which she can logon to her account and fix the problem. Help Sutapa by telling her the precautions she should take when she receives these type of emails. | | | | 2 | |
| 32 | Explain any two ways in which technology can help students with disabilities. | | | | 2 | |
| 33 | Priyanka is using her internet connection to book a flight ticket. This is a classic example of leaving a trail of web activities carried by her. What do we call this type of activity? What is the risk involved by such kind of activity | | | | 2 | |
|  | **Section II** | | | |  | |
| 34 | Consider two objects x and y. x is a list whereas y is a Series. Both have values 200, 40,190, 10. What will be the output of the following two statements considering that the above objects have been created already  a. print (x+x)  b. print(y+y) Justify your answer. | | | | 3 | |
| 35 | What do you mean by Identity theft? Explain with the help of an example.  OR  Ms Samtha has many electronics gadgets which are not usable due to outdated hardware and software. Help her to find any three best ways to dispose the used electronic gadgets. | | | | 3 | |
| 36 | Create a bar graph as shown below  Oro    OR | | | | 3 | |
|  | Create a line graph | | | |  | |
| 37 | Consider the table FANS    Write MySQL queries for the following:   1. To display the details of fans in decending order of their DOB 2. To display the details of FANS who does not belong to AJMER 3. To display the dob of the youngest fan. | | | | 3 | |
|  | **SECTION III** | | | |  | |
| 38 | Write a program in Python Pandas to create the following DataFrame student from a Dictionary:  S\_NO Name Mark1 Mark2  1 Sunil Pillai 90 80  2 Gaurav Sharma 65 45  3 Piyush Goel 70 90  4 Kartik Thakur 80 76  Perform the following operations on the DataFrame :  1)Add both the marks and assign to column “Total”  2)Display the highest Total mark of the DataFrame.  3)Display the details from DataFrame who scored less 90. | | | | 5 | |
| 39 | Write the output of the following SQL queries:   1. select pow((pow(2,3)),2); 2. SELECT ucase(SUBSTR(‘Expo2020”,2,3)); 3. SELECT TRUNCATE (192.672, 1); 4. SELECT ROUND (562.12, -2); 5. SELECT INSTR(‘Coordination ‘,’e’);   OR  Consider a table Student with the following data: | | | | 5 | |
|  | Write SQL queries using SQL functions to perform the following operations:  a) Display student name in capital letters.  b) Display the student names those have letter a in their second position.  c) Display the four characters from student name starting from second character  d) Display the birthday month name of all students.  e) Display the number of students from each city. | | | |  | |
| 40 | Uplifting Skills Hub India is a knowledge and skill community which has an aim to uplift the standard of knowledge and skills in the society. It is planning to setup its training centers in multiple towns and villages pan India with its head offices in the nearest cities. They have created a model of their network with a city, a town and 3 villages as follows. As a network consultant, you have to suggest the best network related solutions for their issues/problems raised in (i) to (iv) keeping in mind the distances between various locations and other given parameters.       1. Suggest a most suitable cable layout for the above connections. 2. Suggest the most appropriate topology of the connection between the wings 3. The company wants internet accessibility in all the wings. Suggest a suitable technology 4. Suggest the placement of the following devices with justification if the company wants minimized network traffic   a)Repeater b)Hub / switch   1. Suggest the most appropriate location of the SERVER in the B\_HUB (out of the 4 locations), to get the best and effective connectivity. Justify your answer | | | | 5 | |
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