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| **B** | | | | | |
| **HY/IPC/1220B 12/11/2020** | | | | | |
| **HALF YEARLY EXAMINATION (2021-21)** | | | | | |
| **Subject: Informatics Practices**  **Grade: XII** | | | Max. Marks: 70Time:3 hours | | |
| **Name:** | | **Section:** | | **Roll No:** | |
| **General Instructions:**   * This question paper contains two parts A and B. Each part is compulsory. * Both Part A and Part B have choices. * 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 subparts.  An examinee is to attempt any 4 out of the 5 subparts.   * Part - B is Descriptive Paper. * Part- B has three sections * a. Section-I is short answer questions of 2 marks each in which one questions have internal * options. * b. Section-II is long answer questions of 3 marks each * c. Section-III is very long answer questions of 5 marks each * All answers to be written in the answer sheet provided. | | | | | |
|  | **PART A** | | | |  |
|  | **SECTION I**  **Attempt any 15 questions from questions 1 to 21** | | | |  |
| 1 | State whether True or False :   1. **i. Cyber Law can be generalized as “Law of Internet”** . 2. Open Source Software means only that the software is free of cost. | | | | 1 |
| 2. | An organisation purchases new computers every year and dumps the old ones into the local dumping yard. Write the name of the most appropriate category of waste that the organisation is creating every year, out of the following options   1. Solid Waste 2. Commercial Waste 3. E-Waste 4. Business Waste | | | | 1 |
| 3. | Which statement is used to add records in to a table?   1. add 2. append 3. insert 4. addnew | | | | 1 |
| 4. | Display LastName and Firstname from emp table who have "at" in the second position in their first names   1. Select lastname, firstname from emp where firstname=’at’; 2. Select firstname and secondname from emp where firstname=’\_at’; 3. Select firstname, secondname from emp where firstname like ‘\_at%’; 4. Select firstname and secondname from emp where instr(firstname,2)=’\_at’; | | | | 1 |
| 5. | The SQL statement to display the position of "Exam" in "CBSEBoardExam".   1. Select Inpos(‘CBSEBoardExam’.’Exam’) 2. Select instr(‘CBSEBoardExam’.’Exam’) 3. Select substr(‘CBSEBoardExam’.’Exam’) 4. Select strpos(‘CBSEBoardExam’.’Exam’) | | | | 1 |
| 6. | The SQL statement to display the position of "Learn" in "eLearning".   1. Select Inpos(‘eLearning’.’Learn’) 2. Select instr(‘eLearning’.’Learn’) 3. Select substr(‘eLearning’.’Learn’) 4. Select strpos(‘eLearning’.’Learn’) | | | | 1 |
| 7. | To change the first name Hriday to Mridul the FName column in the Student table   1. UPDATE Student SET FName='Mridul' WHERE FName='Hriday' ; 2. MODIFY Student SET FName='Hriday' INTO FName='Mridul ; 3. UPDATE Student SET FName='Hriday' INTO FName='Mridul' ; 4. D. UPDATE Student SET FName='Hriday' WHERE FName='Mridul' ; | | | | 1 |
| 8. | Data which has no restriction of usage and is freely available to everyone under Intellectual Property Rights is categorised as   1. Open Source 2. Open Data 3. Open Content 4. Open Education | | | | 1 |
| 9. | Any String function returns   1. Only string 2. Only number 3. String or number 4. String, number or date type data. | | | | 1 |
| 10. | Given a Pandas series called S, the command which will display the last 5 rows i   1. print(S.tail()) 2. print(S.Tail(5)) 3. print(S.tail(5) 4. Both a and c | | | | 1 |
| 11 | To prevent unauthorized access to and / or from the network, a system known as \_\_\_\_\_\_\_\_\_\_\_\_, can be implemented by hardware and / or software. | | | | 1 |
| 12. | In a DataFrame, Axis= 0 represents the\_\_\_\_\_\_\_\_\_\_\_\_\_ elements. | | | | 1 |
| 13. | Write a suitable Python code to create an empty dataframe. | | | |  |
| 14. | Which method is used to explain what each line means in the current figure.   1. Legend 2. Show 3. Save | | | | 1 |
| 15. | What out of the following, you will use to have an audio-visual chat with an expert sitting in a faraway place to fix-up a technical issue:   1. email 2. VOIP 3. Telnet 4. FTP | | | | 1 |
| 16. | What will be the output of the following program  import pandas as pd  s1=pd.Series(['1','2','3'])  s2=pd.Series(['11','22','33'])  print(s1+s2) | | | | 1 |
| 17. | Write a statement to display the series where the letter equal to ‘n’ based on following ser  import pandas as pd  list = ['p', 'y', 't', 'h', 'o','n']  ser = pd.Series(list) | | | | 1 |
| 18. | What will be the output of the following code  import pandas as pd  data = {'Name':['Tom', 'Jack', 'Steve', 'Ricky'],'Age':[28,34,29,42]}  df = pd.DataFrame(data, index=['rank1','rank2','rank3','rank4'])  print(df) | | | | 1 |
| 19. | Which command is used to delete a row in dataframe. | | | | 1 |
| 20. | Write a suitable Python code to create an empty dataframe. | | | | 1 |
| 21. | Write the command used to save a graph on your system. | | | | 1 |
|  | **SECTION II**  Qn 22 &23 are compulsory. Attempt any 4sub parts from each question. | | | |  |
| 22. | Consider the following datafroame. Find out the following  d={"Name":['Abbas','Jithin','Rahul','Pranav'], "Marks":[100,72,14,16]}  df3=pd.DataFrame(d,index=['R1','R2','R3','R4'])   1. print(df3.loc['R3']) 2. print(df3.iloc[2]) 3. print(df3[df3[‘Marks’]==100]) 4. print(df3.max()) 5. print(df3.count(axis=1)) | | | | 1  1  1  1  1 |
| 23. | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | Admno | Name | Grade | Sec | Mob | Game | Remarks | | 1271 | Utpal | 12 | C | 66991234 | Soccer | A1 | | 1324 | Dinesh | 10 | A | 99678910 | Cricket | B1 | | 1364 | Akhtar | 12 | B | 55123430 | Hockey | A1 | | 1434 | Varun | 11 | B | 69235678 | Soccer | B1 | | 1461 | David | 12 | B | 93125702 | Hockey | A2 | | 2324 | Suresh | 11 | C | 54435729 | Soccer | A1 | | 2371 | Mohini | 10 | C | 63363747 | Cricket | B1 |   Consider the following table sports  Write sql queries for the following: | | | |  |
| i) | Display ADNO, NAME, Grade and SEC whose Grade is either 10 or 12 | | | | 1 |
| ii) | Display the number of students Grade wise | | | | 1 |
| iii) | Display the table sorted on NAME | | | | 1 |
| iv) | Display details of students whose GAME is 'CRICKET' and Remarks is 'A1' | | | | 1 |
| v) | Display the number of students opted for ‘Hockey’ | | | | 1 |
| 23. | Consider the following datafroame. Find out the following  d={"Name":['Abbas','Jithin','Rahul','Pranav'], "Marks":[100,72,14,16]}  df3=pd.DataFrame(d,index=['R1','R2','R3','R4'])   1. print(df3.loc['R3']) 2. print(df3.iloc[2]) 3. print(df3[df3[‘Marks’]==100]) 4. print(df3.max()) 5. print(df3.count(axis=1)) | | | | 1  1  1  1  1 |
|  | **PART B** | | | |  |
|  | **SECTION 1** | | | |  |
| 24. | Write a Python program to create a series that stores the marks of each subject. Assume there are 5 subjects “English”,”B.Studies”,”Accounts”,”Maths”,”Mktg” . The marks are 75,80,45,95,78 respectively. The index number will be the subject name. | | | | 2 |
| 25. | Explain the difference between DDL and DML and also write the sql commands for each.  OR  How is HAVING clause similar to WHERE clause ? How is HAVING clause different from WHERE clause ? Explain with the help of examples of each. | | | | 2 |
| 26. | Consider the decimal number x with value 8459.2654. Write commands in SQL  i. truncate it off to a whole number  ii. truncate it to 2 places before the decimal. | | | | 2 |
| 27. | Find the Output of following :  (i) select concat(left('Team',2),right('Work',1));  (ii) select truncate(4567.132,-1);  (iii)select monthname(now());  (iv)select dayofyear(curdate()); | | | | 2 |
| 28. | Define cookies. Give two practical applications that require the use of cookies. | | | | 2 |
| 29. | Jai is an IT expert and a freelancer. He recently used his skills to access the Administrator password for the network server of Megatech Corpn Ltd. and provided confidential data of the organization to its Director, informing him about the vulnerability of their network security. Out of the following options (i) to (iv), which one most appropriately defines Jai ? 2 Justify the reason for your chosen option :   1. Hacker 2. Cracker 3. Operator 4. Network Admin | | | | 2 |
| 30. | Create a table name as Department with the following structure :  Field Name Field Type Constraint  DEPTNO Integer PRIMARY KEY  DNAME Varchar(14) NOT NULL  LOC Varchar(13)  Salary Integer | | | | 2 |
| 31. | Consider the following scenario and answer the questions which follow :  ‘‘A student is expected to write a research paper on a topic. The student had a friend who took a similar class five years ago. The student asks his older friend for a copy of his paper and then takes the paper and submits the entire paper as his own research work.’’   1. Which of the following activities appropriately categorises the act of the writer   (A) Plagiarism  (B) Spamming  (C) Virus  (D) Phishing   1. Which kind of offense out of the following is made by the student ?   (A) Cyber Crime  (B) Civil Crime  (C) Violation of Intellectual Property Rights | | | | 2 |
| 32. | What happens to the Network with Star topology if the following happens :   1. One of the computers on the network fails ? 2. The central hub or switch to which all computers are connected, fails | | | | 2 |
| 33. | What do you understand by Net Ettiquetes? Explain any two such ettiquetes. | | | | 2 |
|  | SECTION II | | | |  |
| 34. | Write the purpose of the following devices :  1) Network Interface Card  2) Repeater  3) Modem | | | | 3 |
| 35. | Explain the term digital foot prints. Specify two types of digital foot prints with suitable example. | | | | 3 |
| 36. | Write a script to draw a bar chart by importing appropriate package:   1. The title of the bar chart is ' ODI Scores' 2. teams=['MUMBAI', 'DELHI', 'RAJASTAN', 'KOLKATA', 'GOA'] X-axis 3. runs=[88, 78, 102, 43, 85] as the values for y-axis 4. Label x-axis as 'Teams' 5. Label y-axis as 'Runs' 6. Plot the bar chart 7. Display the bar chart on the screen   OR | | | | 3 |
|  | Create a line Graph | | | |  |
| 37. | Observe the following tables, EMPLOYEES and DEPARTMENT carefully and answer the questions that follow :     1. Give the Degree of the table EMPLOYEE & the cardinality of the table DEPARTMENT. 2. Differentiate between Primary Key and Foreign Key. 3. Specify the Primary key and Foreign key of Table employees | | | | 3 |
|  | **SECTION III** | | | |  |
| 38. | Write a program to create a dataframe for the following and perform the following.  Name Marks1 Marks2  0 Amit 10 20  1 Jeevan 12 30  2 Rani 14 40  3 Pranav 16 50   1. Add a new column Average to store the average of both the marks. 2. Display the dataframe in ascending order of average 3. Display the details of Jeeva | | | | 5 |
| 39. | **Consider the following table.**  **Loan\_accounts**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | AcNo | Cust\_name | Loanamount | IntRate | StartDate | Type | | 1 | Mr.R.K.Gupta | 300000 | 12.00 | 2019-07-19 | HouseLoan | | 2 | Mr.S.P.Sharma | 500000 | 10.00 | 2018-03-22 | VehicleLoan | | 3 | Ms.K.P.Jain | 300000 | NULL | 2017-03-08 | HouseLoan | | 4 | Mr.M.P.Yadav | 800000 | 10.00 | 2018-12-06 | HouseLoan | | 5 | Mr.S.P.Sinha | 200000 | 12.50 | 2020-01-03 | VehicleLoan | | 6 | Mr.P.Sharma | 700000 | 12.50 | 2018-06-05 | HouseLoan | | 7 | Ms.Shanu | 500000 | NULL | 2016-03-05 | GoldLoan |   Write MySQL commands for the following   1. Display the IntRate of all the loans started in 2018. 2. Display the details of all the loans whose rate of interest is not NULL. 3. Display the largest loan amount for each loan type. 4. Display names of female customers. 5. Display the AcNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name does not contain 'S'. | | | | 5 |
| 40. | Helping Hands is an NGO with its head office at Mumbai and branches located at Delhi, Kolkata and Chennai. Their Head Office located at Delhi needs a communication network to be established between the head office and all the branch offices. The NGO has received a grant from the national government for setting up the network. The physical distances between the branch offices and the head office and the number of computers to be installed in each of these branch offices and the head office are given below. You, as a network expert, have to suggest the best possible solutions for the queries as raised by the NGO, as given in (i) to (v)   1. Suggest a suitable Topology for Networking the computer of all wings 2. Name the wing where the server is to be installed. Justify your answer. 3. Suggest the placement of Hub/Switch in the network. 4. Which of the following will you suggest to establish the online face to face communication between the people in the Admin Office/Wing and Senior/Wing?   a) Cable TV b) Email c) Video Conferencing d) Text Chat  v) Write the name of the type of network out of the following, which will be formed by connecting all the computer systems across the network :  (A) WAN  (B) MAN  (C) LAN  (D) PAN | | | | 5 |

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