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| **B** | | | | | |
| **HY/IPH/1220/B 05/11/2020** | | | | | |
| **HALF YEARLY EXAMINATION (2021-21)** | | | | | |
| **Subject: INFORMATICS PRACTICES (H)**  **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 1**  (Attempt any 15 questions out of 21) | | | |  |
| 1 | The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ statement is used to see the structure of a table. | | | | 1 |
| 2. | The keyword \_\_\_\_\_\_\_\_\_\_\_\_is used to search for null value. | | | | 1 |
| 3. | Which statement is used to see the structure of a table?  A. SELECT  B. DISPLAY  C. DESC  D. EXTRACT | | | | 1 |
| 4. | How do you select a column named "IName" from a table named "Inventory"?  A. SELECT Inventory FROM Iname;  B. DISPLAY Iname FROM Inventory;  C. SELECT Iname FROM Inventory;  D. SELECT Iname, Inventory FROM Iname; | | | | 1 |
| 5. | Identify arithmetic/relational/logical **operator** from the list given below:  and, //, ==, \*\* | | | | 1 |
| 6. | State whether True or False  The AND operator displays a record if ANY of the conditions listed are true. The OR operator displays a record if ALL of the conditions listed are true   1. True 2. False | | | | 1 |
| 7. | Which statement is appropriate to change the first name "Madhur" to "Mridul" in the "FName" column in the 'Student' table?  A. UPDATE Student SET FName='Mridul' WHERE FName='Madhur' ;  B. MODIFY Student SET FName='Madhur' INTO FName='Mridul ;  C. UPDATE Student SET FName='Madhur' INTO FName='Mridul' ;  D. UPDATE Student SET FName='Madhur' WHERE FName='Mridul' ; | | | | 1 |
| 8. | SELECT TRUNCATE(7.956,2) will result in | | | | 1 |
| 9. | Any String function returns  (a) Only string  (b) Only number  (c) String or number  (d) String, number or date type data. | | | | 1 |
| 10. | Given a Pandas series called Sequences, the command which will display the last 4 rows is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.  a. print(Sequences.tail(4))  b. print(Sequences.Tail(4))  c. print(Sequences.tails(4)  d. print(Sequences.Tails(4)) | | | | 1 |
| 11 | Radio signals can through walls / physical barriers. | | | | 1 |
| 12. | In a DataFrame, Axis= 0 represents the\_\_\_\_\_\_\_\_\_\_\_\_\_ elements. | | | | 1 |
| 13. | Which of the following is used for wireless communication?  a. Optical Fiber  b. UTP cable  c. Radio Waves  d. Coaxial Cable | | | | 1 |
| 14. | A repeater  a. Regenerates the received signal  b. Destroys the received signal  c. Can be used as a hub  d. None of the above | | | | 1 |
| 15. | Micro waves are  a. Uni directional  b. Omni directional  c. Guided media  d. Not used for communication | | | | 1 |
| 16. | What will be the output of the following program  import pandas as pd  list = ['p', 'y', 't', 'h', 'o','n']  ser = pd.Series(list)  print(ser) | | | | 1 |
| 17. | Write a statement to display the series where the letter above or equal ‘n’ based on following series  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 add a row in dataframe. | | | | 1 |
| 20. | Which command is used to draw a line graph | | | | 1 |
| 21. | Which command is used to display the graph | | | | 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 table PATIENT   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | PNAME | AGE | WARD | ADMITDATE | TARIFF | GEN | | KARIM | 32 | ORTHO | 2012-02-19 | 1600.0 | M | | ARUN | 12 | SURGERY | 2012-11-01 | 1900.0 | M | | ZAFAR | 30 | ENT | 2012-01-12 | 1500.0 | M | | KIRAN | 16 | ENT | 2012-02-24 | 1500.0 | F | | ANKUR | 29 | CARDIO | 2012-02-20 | 1800.0 | F | | SUHAIL | 45 | ORTHO | 2012-02-22 | 1600.0 | F | | KETAN | 19 | CARDIO | 2012-01-13 | 1800.0 | M | | ANUSHA | 23 | SURGERY | 2012-02-21 | 1900.0 | F | | ARPRIT | 42 | CARDIO | 2012-02-23 | 1800.0 | M | | TARUN | 53 | SURGERY | 2012-01-17 | 1900.0 | M | | GAURAV | 39 | ENT | 2012-10-11 | 1500.0 | F |   Write the SQL query for the followings: | | | |  |
| i) | List the complete information of all male patients in SURGERY ward | | | | 1 |
| ii) | Increase the TARIFF of ORTHO ward by 15%. | | | | 1 |
| iii) | Display a report showing PNAME, AGE, WARD and (7\*TARIFF) | | | | 1 |
| iv) | Count the number of patients in each ward | | | | 1 |
| v) | Select the details of all patients whose ward is “cardio” and admitted in the year Feb 2012 | | | | 1 |
| 23. | Consider the following data ]frame. Find out the following  P={"M":['A','B','C','D','E'],'N':[10,30,20,40,20]}  df=pd.DataFrame(P)   1. print(df['N']>=40) 2. print(df.max(axis=1)) 3. print(df[df[‘M’]==’D’]) 4. print(df.count(axis=’index’)) 5. write the command to display the column. | | | | 4 |
|  | **PART B** | | | |  |
|  | **SECTION 1** | | | |  |
| 24. | Write a Python program to create a series that stores the marks of each unit test. Assume there are 4 unit test, UT1, UT2,UT3 and UT4 . The marks are 75,80,45,76 respectively | | | | 2 |
| 25. | Explain the difference between group by and order by with suitable example  OR  Explain the difference between where and having with suitable example | | | | 2 |
| 26. | Find the Output of following :  (i) SELECT ROUND (1.298,2);  (ii) SELECT POW(3,4);  (iii) SELECT LOWER(‘MYSQL QUERY LANGUAGE’);  (iv) SELECT SUBSTR(‘MYSQL LANGUAGE’, 7,8); | | | | 2 |
| 27. | Write MySql command that will be used to open an already existing database "CONTACTS” and also display the tables in it | | | | 2 |
| 28. | A table "Transport" in a database has degree 3 and cardinality 8. What is the number of rows and columns in it? | | | | 2 |
| 29. | Write SQL query to display employee details from table named ‘Employee’ whose ‘firstname’ ends with ‘n’ and firstname contains a total of 4 characters (including n). | | | | 2 |
| 30. | Write a MySql command for creating a table "BANK" whose structure is given below:  Table: BANK  Field Name Datatype Size Constraint  Acct\_number Integer 4 Primary key  Name Varchar 30  BirthDate Date  Balance Integer 8 Not Null | | | | 2 |
| 31. | A school with 20 stand-alone computers is considering networking them together and adding a server. State 2 advantages of doing this. | | | | 2 |
| 32. | Distinguish between LAN and WAN. | | | | 2 |
| 33. | What is the purpose of Modem in network? | | | | 2 |
|  |  | | | |  |
|  | **SECTION II** | | | |  |
| 34. | Find the output of the following program  L=['p','w','r','d','a']  L.sort()  print(L)  L.reverse()  print(L)  L.remove('r')  print(L)  print(L.pop())  del L[1]  print(L) | | | | 3 |
| 35. | Write a python script to create a series contains item and price, display sum, min, max ,mean and count.  For example if the series  Pen 100  Pin 85  Pencil 20  Leas 120  Display the output in the following format:  Total : 325.0  Average : 235.0  High : 120  Low : 20  No of items : 4 | | | | 3 |
| 36. | Write any two differences between wired and wireless communication. Give two example of each | | | | 3 |
| 37 | Write a program to create a dataframe for the following and perform the following.  Name Marks1 Marks2  0 Ami 10 20  1 Jai 12 30  2 Raj 14 40  3 Pran 16 50   1. Add a new column total to add both the marks 2. Display the dataframe in descending order of total | | | | 3 |
|  | **SECTION III** | | | |  |
| 38 | Write a Python script with following details, to draw line charts:   * Import the appropriate package for plotting line charts * The title of the line chart is 'Line Chart' * Plot a line chart for the squares of 1, 3, 5, 7, 9 in red * Plot a line chart for the cubes of 2, 4, 6, 8, 10 in green * Label x-axis as 'x values' and label y-axis as 'x\*\*2 / x\*\*3' * Display the line chart on the screen | | | | 5 |
| 39 | Based on the following table:   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | PNAME | AGE | WARD | ADMITDATE | TARIFF | GEN | | KARIM | 32 | ORTHO | 2012-02-19 | 1600.0 | M | | ARUN | 12 | SURGERY | 2012-11-01 | 1900.0 | M | | ZAFAR | 30 | ENT | 2012-01-12 | 1500.0 | M | | KIRAN | 16 | ENT | 2012-02-24 | 1500.0 | F | | ANKUR | 29 | CARDIO | 2012-02-20 | 1800.0 | F | | SUHAIL | 45 | ORTHO | 2012-02-22 | 1600.0 | F | | KETAN | 19 | CARDIO | 2012-01-13 | 1800.0 | M | | ANUSHA | 23 | SURGERY | 2012-02-21 | 1900.0 | F | | ARPRIT | 42 | CARDIO | 2012-02-23 | 1800.0 | M | | TARUN | 53 | SURGERY | 2012-01-17 | 1900.0 | M | | GAURAV | 39 | ENT | 2012-10-11 | 1500.0 | F |   Give the output of the following SQL commands: a) SELECT GEN, COUNT(\*) FROM PATIENT GROUP BY GEN;   1. SELECT MAX(ADMITDATE), MIN(ADMITDATE) FROM PATIENT; 2. SELECT SUM(TARIIF), AVG(TARIFF) FROM PATIENT WHERE WARD IN ('CARDIO','ORTHO'); 3. SELECT PNAME FROM PATIENT WHERE PNAME LIKE 'A%'; 4. Select Name from PATIENT where WARD=’ent’; | | | | 5 |
| 40 | Gamma Inc has set up its new office campus in Hyderabad. Gamma Inc has 4 wings. Marketing wing has 20 computers, Finance wing has 30 computers, Info Tech wing has 80 computers and Admin wing has 20 computers.   * 1. Suggest a suitable network topology and cable for the network.  1. Suggest the most suitable block to place the network server and why? 2. Suggest the placement of switch. 3. Gamma Inc’s Hyderabad campus is connected to Head Office located in Mumbai (distance of 700 KM). Suggest type of network made this connection possible. Justify your answer. 4. Which type of network will be used if company wants to start a new office in the same city | | | | 5 |

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