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| **PB/IPCAK/1220/A 18/01/2021** | | | |
| **PRE BOARD EXAMINATION (2020-21)** | | | |
| **Subject: INFORMATICS PRACTICES(ANSWER KEY)**  **Grade: XII** | | Max. Marks:Time:3 Hours | |
|  | **Answer Key** | |  |
|  | **PART A** | |  |
| 1 | b) Availability of air tickets and fares | | 1 |
| 2 | Which of the following is a network topology :   1. LAN 2. **Mesh** 3. Fibre Optics 4. None of the above | | 1 |
| 3. | Which statement is used to add records in to a table?   1. add 2. append 3. insert 4. addnew | | 1 |
| 4. | Write the SQL command that will display the current time and date  Ans:**Now()** | | 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. | 1. Linux | | 1 |
| 7. | b) | | 1 |
| 8. | c ) | | 1 |
| 9. | b) | | 1 |
| 10. | Given a Pandas series called S, the command which will display the last 5 rows :   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.  **Ans Firewall** | | 1 |
| 12. | In a DataFrame, Axis= 0 represents the\_\_\_\_\_\_\_\_\_\_\_\_\_ elements.  Ans row | | 1 |
| 13. | Write a suitable Python code to create an empty dataframe.  Import pandas as pd  df=pd.DataFrame()  (½ mark each) | | 1 |
| 14. | Which method is used to explain what each line means in the current figure.   1. legend( ) 2. show( ) 3. save( ) 4. plot( ) | | 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)  Ans  0 111  1 222  2 333  dtype: object | | 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)  **Ans**  print(ser[ser=='n']) | | 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)  Ans  **Name Age**  **rank1 Tom 28**  **rank2 Jack 34**  **rank3 Steve 29**  **rank4 Ricky 42** | | 1 |
| 19. | 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 |
| 20. | Complete the query **select \_\_\_\_\_\_\_('2020-05-17')+1;** so that it returns 18   1. Month 2. Day 3. Year 4. Dayofweek | | 1 |
| 21. | 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 |
|  | **SECTION II**  Qn 22 &23 are compulsory. Attempt any 4 sub parts from each question. | |  |
| 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.     1. print(df.max) 2. print(df.max()) 3. print(df.max(axis=1)) 4. print(df.max, axis=1) | |  |
| ii) | To display the city and temperature   1. print(df(‘City’,’Temperature’) 2. print(df[['City','Temperature]]) 3. print(df['City','Temperature']) 4. print(df(city,temperature)) | |  |
| iii) | Which of the following statement/s will give the exact number of values in each column of the dataframe?   1. print(df.count()) 2. print(df.number()) 3. print(df.count) 4. print(df.count(axis=’index’)) | |  |
| iv) | Which of the following command will display the column labels of the DataFrame?   1. print(df.columns()) 2. print(df.column()) 3. print(df.column) 4. print(df.columns) | |  |
| (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:   1. df.column=[10,0,12,13] 2. df [’Precipitation’]=[10,0,12,13] 3. df.[’Precipitation’]= [10,0,12,13] 4. Both (b) and (c) are correct | |  |
| 23. | |  |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | --- | | No. | Name | Age | Department | DOJ | Salary | Gender | | 1 | Jugal | 33 | Computer | 2007-01-10 | 12000 | M | | 2 | Sharmila | 31 | History | 2008-03-23 | 20000 | F | | 3 | Sandeep | 32 | Maths | 2006-12-12 | 20000 | M | | 4 | Sangeeta | 35 | History | 2009-07-01 | 40000 | F | | 5 | Rakesh | 42 | Maths | 2007-09-05 | 25000 | M | | 7 | Sarat | 44 | Computer | 2007-02-25 | 21000 | M |   Select correct options for the following based on Teacher table given | |  |
| i) | Display the name of teachers joined in the year 2008.   1. Select name from teacher where doj=’2008’; 2. Select name from teacher where doj like ‘2008’; 3. Select name from teacher where doj like ‘2008%’; 4. Select name from teacher where doj = ‘2008%’; | | 1 |
| ii) | Count the number of teachers whose name have “h” as second letter   1. Select count(name) from Teacher where name =’\_h%’; 2. Select count(name) from Teacher where name =’\_h%’; 3. Select count(name) from Teacher where name like ’\_h%’; 4. Select count(name) from Teacher where name like ’%h%’; | | 1 |
| iii) | Display Name, age, Salary in the descending order of age and ascending order of salary   1. Select name, age, salary from teacher order by age desc and salary; 2. Select name, age, salary from teacher order by age desc , salary; 3. Select name, age, salary from teacher order by age desc, salary asc; 4. Both b and c | | 1 |
| iv) | Help Ritesh to write the command to display the name of the recently joined teacher.   1. select name,min(DOJ) from teacher ; 2. select name,max(DOJ) from teacher; 3. select name,min(DOJ) from teacher group by name ; 4. select name,maximum(DOJ) from teacher; | | 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.  Ans  import pandas as pd  marks=[75,80,45,95,78]  s=pd.Series(marks,index=[‘English’,’Bst’,’Accounts’,’maths’,’Mktg’])  print(s) | | 2 |
| 25. | Explain the difference between DDL and DML and also write the sql commands for each.  **Ans**  DDL-Data Definition Language Eg Create,Alter,drop  DML Data Manipulation Language Eg Select,insert  OR  Ans   1. Where clause is used to show data set for a table based on a condition and having clause is used to put condition on the result set that comes after using Group by clause. 2. COUNT(\*) returns the number of items in a group, including NULL values and duplicates. COUNT(expression) evaluates expression for each row in a group and returns the number of non null values. | | 2 |
| 26. | Consider the decimal number x with value 8459.2654. Write commands in SQL   1. truncate it off to a whole number   Ans : select truncate(8459.2654,0);   1. truncate it to 2 places before the decimal.   Ans : select truncate(8459.2654,-2); | | 2 |
| 27. | Find the Output of following :  (i) select concat(left('Team',2),right('Work',1)); Tek  (ii) select round(4567.132,1); 4567.1  (iii)select monthname(now()); January  (iv)select dayofyear(curdate()); | | 2 |
| 28. | Define cookies. Give two practical applications that require the use of cookies.  Ans  A cookie is a small piece of data stored on the user's computer by the web browser while browsing a website. Cookies were designed to be a reliable mechanism for websites to remember stateful information or to record the user's browsing activity. They can also be used to remember pieces of information that the user previously entered into form fields, such as names, addresses, passwords, and payment card numbers.  Cookies can keep you signed in.  Cookies can remember your site preferences.  Cookies can give you locally relevant content. | | 2 |
| 29. | Ans  1. Give Your Electronic Waste to a Certified E-Waste Recycler  2. Donating Your Outdated Technology  3. Give Back to Your Electronic Companies and Drop Off Points. | | 2 |
| 30. | Ans  Create table department(  DEPTNO Integer PRIMARY KEY,  DNAME Varchar(14) NOT NULL,  LOC Varchar(13),  Salary Integer); | | 2 |
| 31. | 1. Which of the following activities appropriately categorises the act of the writer   (A) Plagiarism   1. Which kind of offense out of the following is made by the student ?   (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   (1 mark each) | | 2 |
| 33. | What do you understand by Net Ettiquetes? Explain any two such ettiquetes.  Net Ettiquets refers to the proper manners and behaviour we need to exhibit while being online. These include :  No copyright violation: we should not use copyrighted materials without the permission of the creator or owner. We should give proper credit to owners/creators of open source content when using them  Avoid cyber bullying: Avoid any insulting, degrading or intimidating online behaviour like repeated posting of rumours, giving threats online, posting the victim’s personal information, or comments aimed to publicly ridicule a victim | | 2 |
|  | SECTION II | |  |
| 34. | Write the purpose of the following devices :   1. Network Interface Card   A **network interface card** (NIC) is a hardware component without which a computer cannot be connected over a **network**. It is a circuit board installed in a computer that provides a dedicated **network** connection to the computer.  2) Repeater -used to amplify signals  A repeater is an electronic device that receives a signal and retransmits it. Repeaters are used to extend transmissions so that the signal can cover longer distances or be received on the other side of an obstruction.  3) Modem  A **modem** modulates one or more carrier wave signals to encode digital information for transmission, and demodulates signals to decode the transmitted information. The **goal** is to produce a signal that can be transmitted easily and decoded reliably to reproduce the original digital data. | | 3 |
| 35. | Explain the term digital foot prints. Specify two types of digital foot prints with suitable example.  Ans  **Digital** footprint or **digital** shadow refers to the trail of data left behind through the use of the Internet or on **digital** devices. **Digital footprints** can be classified as either passive or active. The former is composed of a user's web-browsing activity and information stored as cookies, while the latter is often released deliberately by a user with the intent of sharing information on internet | | 3 |
| 36. | Write code to draw a bar chart by importing appropriate package:  import matplotlib.pyplot as plt  teams=['MUMBAI', 'DELHI', 'RAJASTAN', 'KOLKATA', 'GOA']  runs=[88, 78, 102, 43, 85]  plt.title("ODI Scores'")  plt.xlabel("Teams")  plt.ylabel("Runs")  plt.bar(teams,runs)  plt.show()  OR | | 3 |
|  | Create a line Graph  import matplotlib.pyplot as plt  x=['Jan','Feb','Mar','Apr']  y=[2,4,6,8]  z=[1,4,7,8]  plt.title("Data Analysis")  plt.xlabel("Month")  plt.ylabel("Number of classes")  plt.plot(x,y,linewidth=6,color='r',marker='D',label='Online')  plt.plot(x,z,marker='o',linewidth=4,color='c',label='Onsite')  plt.legend()  plt.show()  1 mark for the import statement  1 mark for appropriate usage of plot()  1 mark for show() | |  |
| 37. | Observe the following tables, EMPLOYEES and DEPARTMENT carefully and answer the questions that follow :     1. Degree of the table EMPLOYEE - 4   Cardinality of the table DEPARTMENT - 3   1. Differentiate between Primary Key and Foreign Key.   (½ mark for definition of primary key)  (½ mark for definition of foreign key)   1. Primary key ENO   Foreign key DNO | | 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 Jeevan   **import pandas as pd**  **data = {'Name':['Amit', 'Jeevan', 'Rani', ‘Pranav'], 'Marks1':[10,12,14,16],'Marks2':[20,30,40,50]}**  **df = pd.DataFrame(data)**   1. **df['average']=(df['Marks1']+df['Marks2'])/2**   **print(df)**   1. **df1=df.sort\_values(by='average')**   **print(df1)**   1. print(df[df.Name=='Jeevan']) | | 5 |
| 39. | **Consider the following table.**  **Loan**   |  |  |  |  |  |  | | --- | --- | --- | --- | --- | --- | | 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.   **Select intrate from loan where startdate like ‘2018%’;**   1. Display the details of all the loans whose rate of interest is not NULL.   **Select \* from loan where intrate is not null;**   1. Display the largest loan amount for each loan type.   **Select Type,max(loanamount) from loan group by type;**   1. Display names of female customers.   **Select cust\_name from loan where cust\_name like ‘Ms%’;**   1. Display the AcNo, Cust\_Name, and Loan\_Amount for all the loans for which the Cust\_Name does not contain 'Y'.   Select AcNo, Cust\_Name, Loan\_Amount from where cust\_name not like ‘%y%’; | | 5 |
| 40. | 1. Suggest a suitable Topology for Networking the computer of all wings      1. Administrative Office 2. **Switch** 3. Topology : Star Topology   Network Cable: Ethernet Cable / Coaxial Cable  (½ Mark for writing the correct topology)  (½ Mark for writing the correct network cable)  v) LAN | | 5 |

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