

**MID- TERM EXAMINATION 2023-24****Subject: INFORMATION TECHNOLOGY****SET -A(ANSWER KEY)****Time Allowed : 3 Hrs****Max. Marks: 60****General Instructions:**

1. Please read the instructions carefully
2. This Question Paper is divided into 02 sections, viz., Section A, Section B
3. Do as per the instructions given in the respective sections.
4. Marks allotted are mentioned against each section/question.
5. All questions must be attempted in the correct order

**SECTION A****Q1 Answer the following questions on Employability Skills****(1 x 4 = 4 marks)**

1	_____ is a trait, wherein, individuals show tendency towards anxiety, self-doubt, depression, shyness and other similar negative feelings. a) Consciousness b) Extraversion c) Agreeableness d) Neuroticism Ans d)	1
2	What is the default alignment of numbers in a cell? a) Left aligned b) Right aligned c) Center aligned d) Randomly aligned Ans b)	1
3	Ridhi owns a construction company and takes risky decisions in her work everyday. Ridhi is an _____. a) entrepreneur b) wage employed person c) labourer d) None of these Ans a)	1
4	Mary believes that she will not have the ability to work with a team when she starts her business. The barrier she is facing is _____. a) getting capital b) self-doubt c) risk taking d) None of these Ans b)	1

Q2	<b>Answer any 6 out of the given 7 questions (1X6=6)</b>	
i	_____ command displays all the tables created in the current database. Ans Show tables;	1
ii	_____ symbol replaces a single character while matching a pattern with LIKE keyword. a) & b) * c) \$ d) None of these Ans d)	1
iii	Rajan has written the following query but it is giving an error. Rectify the error and rewrite the query. SELECT * FROM EMPLOYEE SORT BY SALARY; Ans SELECT * FROM EMPLOYEE ORDER BY SALARY;	1
iv	The number of attributes in a relation is called the _____ of a relation. a) Tuple b) Degree c) Cardinality d) Relation Ans b)	1
v	Define Front End, with respect to web-based application project. Ans The front end is the part of the website users can see and interact with such as the graphical user interface (GUI) and the command line including the design, navigating menus, texts, images etc.	1
vi	_____ offers free tutorials in all web development technologies like HTML, CSS, Javascript, PHPetc. a) w3schools.com b) ncert.com c) udacity.org d) None of these Ans a)	1
vii	DEITY stands for _____ a) Department of Electronics and Information Technology b) Department of Electric and Information Technology c) Division of Electronics and Information Technology d) Department of Electronics and Information Television Ans a)	1
Q3	<b>Answer any 6 out of the given 7 questions (1X6=6)</b>	
i	The expression $p = *9$ is same as $p = p*9$ . a) True b) False c) Maybe d) None of the above Ans b)	1
ii	Choose the correct answer after evaluating the value of n, if value of $p=5, q=19$ $\text{int } n = (q-p) > (p-q) ? (q-p) : (p-q) ;$ a)12 b)13	1

	c)14 d)-14 Ans c) Explanation $(19-5) > (5-19) ? (19-5) : (5-19)$ $14 > -14 ? 14 : -14$													
iii	Which of the following is not a jump statement in Java? a) break b) return c) jump d) continue Ans c)	1												
iv	How many times will the following loop execute? <pre>public static void main(String[] args) {     int sum=0;     for (int i=10; i&gt;5;i++)     {         sum=sum +i;     }     System.out.println(sum); }</pre> a) 5 b) 0 c) 15 d) Infinite loop Ans d)	1												
v	How can you write single line comment in Java? Ans Single line comments are written in java by using //	1												
vi	Write the SQL statement to eliminate the redundant values from the column city of the student table given below. <p style="text-align: center;">Table Student</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Sid</th><th>Sname</th><th>City</th></tr> </thead> <tbody> <tr> <td>101</td><td>Geeta</td><td>Jaipur</td></tr> <tr> <td>102</td><td>Smaira</td><td>Delhi</td></tr> <tr> <td>103</td><td>Ramesh</td><td>Jaipur</td></tr> </tbody> </table> Ans SELECT DISTINCT CITY FROM STUDENT;	Sid	Sname	City	101	Geeta	Jaipur	102	Smaira	Delhi	103	Ramesh	Jaipur	1
Sid	Sname	City												
101	Geeta	Jaipur												
102	Smaira	Delhi												
103	Ramesh	Jaipur												
vii	_____ is the name of the memory location to store a value. Ans variable	1												

Q4 Answer the following 5 questions out of the given 6 questions		(1 x5=5)
i	Find the error in the following snippet <pre>if(a&gt;4?400:600) {     System.out.println("It is correct"); }</pre> Ans >?: never used with if	1

ii	<p>Which of the following statement is correct to display all the cities whose humidity is in the range of 60 to 75 from the 'weather' table?</p> <p>a. SELECT * FROM weather WHERE humidity IN (60 to 75)  b. SELECT * FROM weather WHERE humidity BETWEEN 60 AND 75  c. SELECT * FROM weather WHERE humidity NOT IN (60 AND 75)  d. SELECT * FROM weather WHERE humidity NOT BETWEEN 60 AND 75</p> <p>Ans b)</p>	1
iii	<p>Define RDBMS.</p> <p>Ans The software used to store, manage, query, and retrieve data stored in a database in the form of tables is called a relational database management system (RDBMS).</p>	1
iv	<p>What is SQL?</p> <p>Ans SQL is a language that is used to manage data stored in a RDBMS. It comprises of a Data Definition Language (DDL) and a Data Manipulation Language (DML)</p>	1
v	<p>What do you mean by the scope of a project?</p> <p>Ans The focus is on "what" the application must do. It defines the a detailed list with a clear description of application features its goals and the limitations that are placed on the project.</p>	1
vi	<p>What is JVM?</p> <p>Ans It stands for Java Virtual Machine . it is used to interpret the bytecode into machine independent code.</p>	1

## SECTION B

<b>Answer any 3 out of the given 5 questions on Employability Skills (2 x 3 = 6 marks)</b> <b>Answer each question in 20-30 words</b>		
5	<p>Entrepreneurship is an art and science. Explain</p> <p>Ans Entrepreneurship is considered to be both an art and a science. For a subject to be considered as science, it needs to have a stepwise progression substantiated by valid proof like chemistry or physics. There are steps that need to be followed to attain a specific result. On the other hand, some subjects are categorised as art, where skills are required to attain a specific result and in Entrepreneurship entrepreneur require different skills to attain goals to achieve results.</p>	2
6	<p>Ramesh wants to protect his spreadsheet from unauthorized access as it has some important data in it. What are the steps he can follow to protect the spreadsheet?</p> <p>Ans Tool □ Protect Spreadsheet □ Type in password.</p>	2
7	<p>Define the term Intrinsic motivation.</p> <p>Ans It includes activities for which there is no apparent reward but one derives enjoyment and satisfaction in doing them. It occurs when people are internally motivated to do something because it brings them pleasure.</p>	2
8	<p>What do you mean by SMART goals?</p> <p>Ans S: Specific  Goals should be stated in specific terms. Vague goals are difficult to attain.  M: Measurable</p>	2

	<p>Goals should always be measurable.  A: Action-oriented  Goals do not just come true on their own.  R: Realistic  Goals must always be realistically attainable.  T: Timely  Goals must have deadlines.</p>	
9	<p>Define the term self-awareness.  Ans Self-awareness is about understanding one's own needs, desires, habits, traits, behaviours and feelings.</p>	2

Answer any 4 out of the given 5 questions Answer the following questions in brief			(2 x 4= 8 marks)												
10	Define the term Program Data Independence. Ans The definition of data is stored separately in a DBMS, any change in the structure of data would be done in the catalogue and hence programs which access this data need not be modified. This property is called Program-Data Independence.		2												
11	Differentiate between DDL and DML commands. Ans <table><tr><td>DDL</td><td>DML</td></tr><tr><td>It stands for Data Definition Language</td><td>It stands for Data Manipulation Language</td></tr><tr><td>The commonly used commands under DDL language are: CREATE, DROP, ALTER</td><td>The commonly used commands under DML language are:Insert,Update,Delete</td></tr></table>		DDL	DML	It stands for Data Definition Language	It stands for Data Manipulation Language	The commonly used commands under DDL language are: CREATE, DROP, ALTER	The commonly used commands under DML language are:Insert,Update,Delete	2						
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The commonly used commands under DDL language are: CREATE, DROP, ALTER	The commonly used commands under DML language are:Insert,Update,Delete														
12	Consider the following table Teacher and answer the questions that follow: Table Teacher <table><tr><td>Teacherid</td><td>Department</td><td>Periods</td></tr><tr><td>T101</td><td>Science</td><td>32</td></tr><tr><td>T102</td><td>Null</td><td>30</td></tr><tr><td>T103</td><td>Mathematics</td><td>34</td></tr></table> What will be the output of the following queries on the basis of the above table? a) Select count( Department) from Teacher; b) Select count(*)from Teacher;  Ans a) 2 b) 3		Teacherid	Department	Periods	T101	Science	32	T102	Null	30	T103	Mathematics	34	2
Teacherid	Department	Periods													
T101	Science	32													
T102	Null	30													
T103	Mathematics	34													

13	<p>Consider the following code for creating a table in the database:</p> <pre>CREATE TABLE Employee ( EMP_ID INTEGER ,   First_Name VARCHAR(20),   Last_Name VARCHAR(20),   Dept_No INTEGER, FOREIGN KEY (Dept_No) REFERENCES Department (Dept_ID) ON DELETE CASCADE ON UPDATE CASCADE );</pre> <p>Explain the use of ON DELETE CASCADE ON UPDATE CASCADE in the above-mentioned code.</p> <p>Ans In the above table, if a department with a given value of the Dept_ID attribute in Department table is deleted, then the corresponding rows in the Teacher table would also be deleted. However if Dept_ID value is updated in the Department table, the change in corresponding value is also reflected in Teacher Table.</p>	2								
14	<p>Ramesh wants to change the default value of the Discount field in the structure of the Customer Table from 10 to 15. Write the SQL command for Ramesh.</p> <p>Ans ALTER TABLE CUSTOMER ALTER DISCOUNT SET DEFAULT 15;</p>	2								
<p><b>Answer any 5 out of the given 6 questions</b> <span style="float:right"><b>(2X5=10)</b></span></p>										
15	<p>What are the precautions to be taken while performing Online Transactions?</p> <p>Ans Make a password complex, like mix case, use numbers and special characters. This decreases ability of automated attacks by trying different character combinations. Be cautious not to leave passwords around and do not share them with friends. Never use names of near and dear ones as passwords.</p> <p>(any two)</p>	2								
16	<p>What are the two broad categories of web-based online applications? Explain with examples.</p> <p>Ans</p> <p>a) Applications that require financial online transactions. Example Paytm.</p> <p>b) Applications that provide information and allow interaction via filling forms, posting query, viewing information, sending email or chatting.</p> <p>Example IRCTC for ticket reservation.</p>	2								
17	<p>Differentiate between if else and switch. Explain with syntax.</p> <table><tr><td>IF ELSE</td><td>SWITCH</td></tr><tr><td>This statement is executed based on the condition inside the if-else statement.</td><td>Switch statements execute as per the user decision.</td></tr><tr><td>This statement is used to choose between two options.</td><td>This statement is used to choose among multiple options.</td></tr><tr><td>The if-else statement estimates integers,characters, pointers, floating points, and boolean types.</td><td>The switch statement estimates integers and character expressions.</td></tr></table>	IF ELSE	SWITCH	This statement is executed based on the condition inside the if-else statement.	Switch statements execute as per the user decision.	This statement is used to choose between two options.	This statement is used to choose among multiple options.	The if-else statement estimates integers,characters, pointers, floating points, and boolean types.	The switch statement estimates integers and character expressions.	2
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The if-else statement estimates integers,characters, pointers, floating points, and boolean types.	The switch statement estimates integers and character expressions.									

18	<p>Define the concept of fall through situation in Java. Support your answer with suitable example.</p> <p>Ans This condition occurs in the switch control statement when there is no break keyword mention for the particular case in the switch statement and cause execution of the cases till no break statement occurs or exit from the switch statement.</p> <p>Example</p> <pre>switch(expression) {     case value1:         //statements     case value2:         //statements     case value3:         //statements     case value-n:         //statements     default:         //statements }</pre>	2												
19	<p>Differentiate between for loop and while loop in Java. Elaborate with the help of an example.</p> <table><tr><th>For Loop</th><th>While Loop</th></tr><tr><td>It is used when the number of iterations are known.</td><td>It is used when the number of iterations are unknown.</td></tr><tr><td>Incase of no condition , the loop is repeated infinite times.</td><td>In case of no condition , an error will be shown.</td></tr><tr><td>Initialization is not repeated.</td><td>Initialization is repeated if carried out during the stage of checking.</td></tr><tr><td>Initialization can be in or out of the loop.</td><td>Initialization is always out of the loop.</td></tr><tr><td>for(i=1;i&lt;2;i++) { System.out.println("Hello");}</td><td>while (i&lt;2) { System.out.println("Hello"); i++; }</td></tr></table>	For Loop	While Loop	It is used when the number of iterations are known.	It is used when the number of iterations are unknown.	Incase of no condition , the loop is repeated infinite times.	In case of no condition , an error will be shown.	Initialization is not repeated.	Initialization is repeated if carried out during the stage of checking.	Initialization can be in or out of the loop.	Initialization is always out of the loop.	for(i=1;i<2;i++) { System.out.println("Hello");}	while (i<2) { System.out.println("Hello"); i++; }	2
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20	<p>Predict the output of the following snippet</p> <pre>public static void main(String [] args) {     int counter=50;     while (true)     {         if(counter &lt;5)             break;          counter=counter-5;     }     System.out.println(counter); }</pre> <p>Ans 0</p>	2												

Answer any 1 of the given 2 questions		( 3x1=3 marks)
21	<p>Define E-Governance. Explain its role and importance in empowering citizens by the Government.</p> <p>Ans Ans E-Governance or electronic governance is the use of electronic i.e. information and communication technology (ICT) tools for governance by government for the citizens.</p> <p>The use of ICT facilitates providing access to information for the citizens by the government. The government has set up ICT enabled services, like, registration of birth/death certificate, booking of railway tickets, RTI application submission, etc.</p> <p>E-governance empowers the citizens socially and economically, and enhances their lives by providing them with quality information and better services. It enables citizens to access information directly, without paying any money to a middleman or a tout. It ushers transparency in the system.</p>	3
22	<p>Find the errors in the following snippet:</p> <pre>char p,q; for(p=1;p&lt;=5;p++); {     Q=p*P*P     System.out.Println(q); } Ans int p,q; for(p=1;p&lt;=5;p++); {     Q=p*P*P     System.out.Println(q); }</pre>	3

Answer the following questions		(4 x3=12 marks)												
23	<p>A) What is the purpose of HAVING clause? How it is different from WHERE clause in SQL?</p> <p>Ans    Ans Having clause</p> <p>a) It is used to impose condition on Group function and is used after GroupBy clause in the query .</p> <p>b) User can not use having clause in    update and delete statements.</p> <p>WHERE clause</p> <p>a) is used to impose condition on Select statement as well as single row function and is used    before group by clause.</p> <p>b) User can use the where clause with update and delete statements.</p> <p>B) Consider the following table: Product and Client. Write the SQL commands for the statements i and ii.</p> <table><tr><th colspan="4">Table Product</th></tr><tr><th>P ID</th><th>Productname</th><th>Manufacturer</th><th>Price</th></tr><tr><td>TP01</td><td>TalcomPowder</td><td>LAK</td><td>40</td></tr></table>	Table Product				P ID	Productname	Manufacturer	Price	TP01	TalcomPowder	LAK	40	2+2
Table Product														
P ID	Productname	Manufacturer	Price											
TP01	TalcomPowder	LAK	40											



	FW05	Facewash	ABC	45
	BS01	Bathsoap	ABC	55
	SH06	Shampoo	XYZ	120
	FW12	Facewash	XYZ	95
	Table Client			
	C_ID	Clientname	City	P_ID
	01	Cosmeticshop	Delhi	FW05
	06	TotalHealth	Mumbai	BS01
	12	LiveLife	Delhi	SH06
	15	PrettyWoman	Delhi	FW12
	16	Dreams	Banglore	TP01
	<p>i) To display the ClientName, City from table Client , productname and Price from table product, with their corresponding matching P_ID.</p> <p>ii) To increase the price of all products by 10.</p> <p>Ans i) SELECT CLIENTNAME,CITY PRODUCTNAME,PRICE FROM CLIENT, PRODUCT WHERE CLIENT.P_ID =PRODUCT.P_ID;</p> <p>ii) UPDATE PRODUCT SET PRICE=PRICE+10;</p>			
24	<p>Write a program to demonstrate the use of post-increment and pre-decrement operators in Java.</p> <p>Ans import java.util.Scanner;</p> <pre>public class PROGRAM1 {     public static void main( String []args)     {         int y=1;         int x=2;         y=x++;         System.out.println(y);         System.out.println(x);         int a=1;         int b=2;         a=--b;         System.out.println(a);         System.out.println(b);     } }</pre>			
25	<p>Write a Java program to accept a number and display all even numbers till that number.</p> <p>Ans import java.util.Scanner;</p> <pre>class HelloWorld {     public static void main(String[] arg)     {         Scanner obj=new Scanner(System.in);         int num;         System.out.println("Enter the number");         num = obj.nextInt();</pre>			

	<pre>System.out.println("The Even numbers are"); for(int i=2;i&lt;=num;i++) {     if(i%2==0)     {         System.out.println(i);     } } }</pre>	
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