

Marking Scheme Strictly Confidential (For Internal and Restricted use only) Senior School Certificate Examination, 2026 SUBJECT NAME INFORMATION TECHNOLOGY (Q.P. CODE 326) SUBJECT CODE – 802	
<u>General Instructions: -</u>	
1	You are aware that evaluation is the most important process in the actual and correct assessment of the candidates. A small mistake in evaluation may lead to serious problems which may affect the future of the candidates, education system and teaching profession. To avoid mistakes, it is requested that before starting evaluation, you must read and understand the spot evaluation guidelines carefully.
2	“Evaluation policy is a confidential policy as it is related to the confidentiality of the examinations conducted, Evaluation done and several other aspects. Its’ leakage to public in any manner could lead to derailment of the examination system and affect the life and future of millions of candidates. Sharing this policy/document to anyone, publishing in any magazine and printing in News Paper/Website etc. may invite action under various rules of the Board and IPC.”
3	Evaluation is to be done as per instructions provided in the Marking Scheme. It should not be done according to one’s own interpretation or any other consideration. Marking Scheme should be strictly adhered to and religiously followed. However, while evaluating, answers which are based on latest information or knowledge and/or are innovative, they may be assessed for their correctness otherwise and due marks be awarded to them. In class-X, while evaluating two competency-based questions, please try to understand given answer and even if reply is not from marking scheme but correct competency is enumerated by the candidate, due marks should be awarded.
4	The Marking Scheme carries only suggested value points for the answers. These are in the nature of Guidelines only and do not constitute the complete answer. The students can have their own expression and if the expression is correct, the due marks should be awarded accordingly.
5	The Head-Examiner must go through the first five answer books evaluated by each evaluator on the first day, to ensure that evaluation has been carried out as per the instructions given in the Marking Scheme. If there is any variation, the same should be zero after deliberation and discussion. The remaining answer books meant for evaluation shall be given only after ensuring that there is no significant variation in the marking of individual evaluators.

6	Evaluators will mark(✓) wherever answer is correct. For wrong answer CROSS “X” be marked. Evaluators will not put right (✓)while evaluating which gives an impression that answer is correct and no marks are awarded. This is most common mistake which evaluators are committing.
7	If a question has parts, please award marks on the right-hand side for each part. Marks awarded for different parts of the question should then be totaled up and written in the left-hand margin and encircled. This may be followed strictly.
8	If a question does not have any parts, marks must be awarded in the left-hand margin and encircled. This may also be followed strictly.
9	If a student has attempted an extra question, answer of the question deserving more marks should be retained and the other answer scored out with a note “ Extra Question ”.
10	No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
11	A full scale of marks _____(example 0 to 80/70/60/50/40/30 marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
12	Every examiner has to necessarily do evaluation work for full working hours i.e., 8 hours every day and evaluate 20 answer books per day in main subjects and 25 answer books per day in other subjects (Details are given in Spot Guidelines).This is in view of the reduced syllabus and number of questions in question paper.

13	<p>Ensure that you do not make the following common types of errors committed by the Examiner in the past:-</p> <ul style="list-style-type: none"> • Leaving answer or part thereof unassessed in an answer book. • Giving more marks for an answer than assigned to it. • Wrong totaling of marks awarded on an answer. • Wrong transfer of marks from the inside pages of the answer book to the title page. • Wrong question wise totaling on the title page. • Wrong totaling of marks of the two columns on the title page. • Wrong grand total. • Marks in words and figures not tallying/not same. • Wrong transfer of marks from the answer book to online award list. • Answers marked as correct, but marks not awarded. (Ensure that the right tick mark is correctly and clearly indicated. It should merely be a line. Same is with the X for incorrect answer.) • Half or a part of answer marked correct and the rest as wrong, but no marks awarded.
14	<p>While evaluating the answer books if the answer is found to be totally incorrect, it should be marked as cross (X) and awarded zero (0) Marks.</p>
15	<p>Any unassessed portion, non-carrying over of marks to the title page, or totaling error detected by the candidate shall damage the prestige of all the personnel engaged in the evaluation work as also of the Board. Hence, in order to uphold the prestige of all concerned, it is again reiterated that the instructions be followed meticulously and judiciously.</p>
16	<p>The Examiners should acquaint themselves with the guidelines given in the “Guidelines for Spot Evaluation” before starting the actual evaluation.</p>
17	<p>Every Examiner shall also ensure that all the answers are evaluated, marks carried over to the title page, correctly totaled and written in figures and words.</p>
18	<p>The candidates are entitled to obtain photocopy of the Answer Book on request on payment of the prescribed processing fee. All Examiners/Additional Head Examiners/Head Examiners are once again reminded that they must ensure that evaluation is carried out strictly as per value points for each answer as given in the Marking Scheme.</p>

MARKING SCHEME
Senior Secondary School Examination, 2026
INFORMATION TECHNOLOGY (Subject Code–802)
[Paper Code:326(SET-4)]

Time allowed : 3 Hours

Maximum Marks: 60

General Instructions:

- (i) *Please read the instructions carefully.*
- (ii) *This Question Paper consists of **24** questions in **two** sections: **Section A** and **Section B**.*
- (iii) ***Section A** has Objective type questions whereas **Section B** contains Subjective type questions.*
- (iv) *Out of the given $(6 + 18) = 24$ questions, a candidate has to answer $(6 + 11) = 17$ questions in the allotted (maximum) time of 3 hours.*
- (v) *All questions of a particular section must be attempted in the correct order.*
- (vi) **Section A: Objective Type Questions (30 Marks):**
 - (a) *This section has **6** questions.*
 - (b) *There is no negative marking.*
 - (c) *Do as per the instructions given.*
 - (d) *Marks allotted are mentioned against each question/part.*
- (vii) **Section B: Subjective Type Questions (30 Marks):**
 - (a) *This section has **18** questions.*
 - (b) *A candidate has to do **11** questions.*
 - (c) *Do as per the instructions given.*
 - (d) *Marks allotted are mentioned against each question/part.*

Note: Ignore semicolon (;) in SQL related commands

SECTION A
(Objective Type Questions)

(30 Marks)

1.	Answer any 4 out of the given 6 questions on Employability Skills.		4x1=4
	(i)	In the acronym 'SMART' to set goals, the letter 'A' implies _____ .	
	Ans.	Action-oriented OR Achievable (1 Mark for the correct answer)	
	(ii)	In which year did the Government of India launch the National Action Plan on Climate Change (NAPCC)? (A) 2005 (B) 2008 (C) 2010 (D) 2012	
	Ans.	(B) OR 2008 (1 Mark for the correct answer)	
	(iii)	Which of the following best describes active listening? (A) Listening passively without responding (B) Hearing words without comprehension (C) A process of comprehending and offering support to the speaker (D) Interrupting the speaker to share your experiences	
	Ans.	(C) OR A process of comprehending and offering support to the speaker (1 Mark for the correct answer)	

	(iv)	A workbook in a spreadsheet refers to: (A) A single document only (B) A spreadsheet with one or more worksheets (C) A rectangular box where a row and a column meet (D) The toolbar of the software application	
	Ans.	(B) OR A spreadsheet with one or more worksheets (1 Mark for the correct answer)	
	(v)	Why are interpersonal skills important for an entrepreneur ? (A) They enable effective collaboration and teamwork. (B) They help in managing finances efficiently. (C) They improve technical knowledge. (D) They ensure personal hobbies are pursued.	
	Ans.	(A) OR They enable effective collaboration and teamwork. (1 Mark for the correct answer)	
	(vi)	Which personality trait is characterized by anxiety, self-doubt, depression and excessive worrying? (A) Extraversion (B) Agreeableness (C) Openness (D) Neuroticism	
	Ans.	(D) OR Neuroticism (1 Mark for the correct answer)	
2.	Answer any 5 out of the given 7 questions.		5 x 1=5
	(i)	Fill in the blank: The number of attributes in a relation is called the _____ of a relation. (A) Degree (B) Cardinality (C) Tuple (D) Domain	

	Ans.	(A) OR Degree (1 Mark for the correct answer)	
	(ii)	Write the output of the following Java code: <pre>public class JavaProg { public static void main(String[] args) { String myStr = "Digital-India "; System.out.println(myStr.concat("Mission")); } }</pre>	
	Ans.	Digital-India Mission (1 Mark for the correct output) OR Digital-IndiaMission (½ Mark for the output without space)	
	(iii)	In a relational database, when the value of an attribute in a tuple is not known, not available or not applicable, which special value is used to represent it? (A) ZERO (B) SPACE (C) NULL (D) DEFAULT	
	Ans.	(C) OR NULL (1 Mark for the correct answer)	
	(iv)	Define e-Governance.	
	Ans.	E-Governance or electronic governance is the use of electronic information and communication technology (ICT) tools for governance by the government for the citizens. (1 Mark for the correct answer or any other relevant definition)	

	(v)	Which of the following is not an advantage of using a DBMS? (A) Reduction in data redundancy (B) Improved data consistency (C) Improved data availability (D) Increased data duplication	
	Ans.	(D) OR Increased data duplication (1 Mark for the correct answer)	
	(vi)	Mention one example of any web-based application.	
	Ans.	Flipkart / Amazon / Facebook / Spotify / Canva (1 Mark for the any correct option or any web-based application)	
	(vii)	Which of the following is an invalid variable name in Java? (A) Product_1 (B) marks (C) Sales123 (D) total-Marks	
	Ans.	(D) OR total-Marks (1 Mark for the correct answer)	
3.	Answer any 6 out of the given 7 questions.		6x1 = 6
	(i)	Which of the following operators in Java is used to compare two values for equality? (A) = (B) == (C) != (D) >	
	Ans.	(B) OR == (1 Mark for the correct answer)	
	(ii)	Which of the following is not a feature of a project? (A) A project is complete when its end objectives are achieved. (B) A project requires infinite resources. (C) A project has a beginning and an end. (D) A project has specific objectives.	

	Ans.	(B) OR A project requires infinite resources. (1 Mark for the correct answer)	
	(iii)	Which of the following best describes webinars ? (A) Pre-recorded video courses (B) Text-based documents (C) Real-time lectures with opportunities to ask questions (D) Interactive games for learning	
	Ans.	(C) OR Real-time lectures with opportunities to ask questions (1 Mark for the correct answer)	
	(iv)	Which loop in Java executes at least once even when the condition is False ?	
	Ans.	<i>do- while loop</i> (1 Mark for the correct answer)	
	(v)	What is a major benefit of online learning? (A) It only teaches how to use software. (B) It allows learners to study at their own location, time and pace. (C) It discriminates against students on the basis of age, caste and qualification. (D) It is only available in regional languages.	
	Ans.	(B) OR It allows learners to study at their own location, time and pace. (1 Mark for the correct answer)	
	(vi)	How many bits of memory does a short type variable use in Java?	
	Ans.	16 bits OR 2 bytes (1 Mark for the correct answer)	

	(vii)	<p>State whether the following statement is True or False:</p> <p>The following SQL command is used to delete a relation/table from a relational database.</p> <p>DELETE TABLE STUDENT;</p>																					
	Ans.	<p>False</p> <p>(1 Mark for correct answer)</p>																					
4.	Answer any 5 out of the given 6 questions.		5x1=5																				
	(i)	<p>State whether the following statement is True or False</p> <p>If there is only one statement in the body of the for loop, the set of curly braces enclosing the body can be omitted</p>																					
	Ans.	<p>True</p> <p>(1 Mark for the correct answer)</p>																					
	(ii)	<p>Consider the following table</p> <p>Table: Student</p> <table border="1"> <thead> <tr> <th>ID</th><th>Name</th><th>City</th><th>Percentage</th></tr> </thead> <tbody> <tr> <td>101</td><td>Rohan</td><td>Delhi</td><td>76.50</td></tr> <tr> <td>102</td><td>Neha</td><td>Mumbai</td><td>74.00</td></tr> <tr> <td>103</td><td>Aarav</td><td>Delhi</td><td>74.00</td></tr> <tr> <td>104</td><td>Neha</td><td>Jaipur</td><td>75.75</td></tr> </tbody> </table> <p>Which attribute can be chosen as the primary key for the above table?</p> <p>(A) Name (B) City</p> <p>(C) Percentage (D) ID</p>	ID	Name	City	Percentage	101	Rohan	Delhi	76.50	102	Neha	Mumbai	74.00	103	Aarav	Delhi	74.00	104	Neha	Jaipur	75.75	
ID	Name	City	Percentage																				
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103	Aarav	Delhi	74.00																				
104	Neha	Jaipur	75.75																				
	Ans.	<p>(D)</p> <p>OR</p> <p>ID</p> <p>(1 Mark for the correct answer)</p>																					

	(iii)	Which of the following correctly matches the website with the main focus? (A) w3schools.com - Humanities and Social Science courses (B) coursea.org - Drag and drop website development tools (C) ncert.nic.in - Online learning resources like e-books and journals (D) udacity.org - Free grammar testing website	
	Ans.	(C) OR ncert.nic.in - Online learning resources like e-books and journals (1 Mark for the correct answer)	
	(iv)	Which of the following is not an aggregate function in SQL? (A) COUNT() (B) MAX() (C) SUM() (D) UPDATE()	
	Ans.	(D) OR UPDATE() (1 Mark for the correct definition)	
	(v)	In Java, which of the following statements is correct about exception handling? (A) A catch block can exist without a try block. (B) Multiple catch blocks can follow a try block to handle different types of exceptions. (C) The finally block is executed only if an exception occurs in the try block. (D) If no exception occurs in the try block, the corresponding catch block is executed.	
	Ans.	(B) OR Multiple catch blocks can follow a try block to handle different types of exceptions. (1 Mark for the correct answer)	

	(vi)	Which of the following is an application of Database Management Systems (DBMS)? (A) Storing students' academic records (B) Creating digital paintings (C) Playing audio and video files (D) Writing fictional stories	
	Ans.	(A) OR Storing students' academic records (1 Mark for the correct answer)	
5.	Answer any 5 out of the given 6 questions.		5 x 1=5
	(i)	What do you understand by methods in Java?	
	Ans.	A method is a named block of statements written to perform a specific task. OR The method body is enclosed within a pair of curly braces and contains the statements that the method will execute. (1 Mark for the correct answer or any relevant answer) (½ mark for an example only)	
	(ii)	What is the purpose of WHERE clause in SQL? (A) It adds a new column to a table. (B) It filters rows on the basis of condition. (C) It sorts the rows in ascending or descending order. (D) It renames columns of the table.	
	Ans.	(B) OR It filters rows on the basis of condition. (1 Mark for the correct answer)	
	(iii)	Mention the expanded form of IDE in the context of programming.	
	Ans.	Integrated Development Environments OR Integrated Development Environment (1 Mark for any correct answer) (½ mark for any two correct words)	

	(iv)	Which SQL command is used to modify the attribute values of one or more tuples in a table? (A) INSERT (B) UPDATE (C) DELETE (D) SELECT	
	Ans.	(B) OR UPDATE <i>(1 Mark for the correct answer)</i>	
	(v)	Which of the following statements is true about the switch statement in Java ? (A) The switch statement is used to execute a block of code based on the value of an expression. (B) The break statement is optional and has no effect on the execution of a switch . (C) If no case matches, the program generates an error. (D) A switch can have only one case statement.	
	Ans.	(A) OR The switch statement is used to execute a block of code based on the value of an expression <i>(1 Mark for the correct answer)</i>	
	(vi)	Which of the following correctly describes online shopping? (A) Customers can buy only books and electronics over the Internet. (B) Customers can browse items online, place them in a virtual basket and make payment. (C) Customers can shop online, but must pay only in cash at delivery. (D) Customers can select items online, but cannot have them delivered.	
	Ans.	(B) OR Customers can browse items online, place them in a virtual basket and make payment. <i>(1 Mark for the correct answer)</i>	

6.	Answer any 5 out of the given 6 questions.		5x1=5
	(i)	Which of the following is known as the National Portal of India? (A) www.india.gov.in (B) www.irctc.co.in (C) www.goidirectory.nic.in (D) www.w3schools.com	
	Ans.	(A) OR www.india.gov.in (1 Mark for the correct answer)	
	(ii)	Which of the following statements is true about using the RESTRICT option while dropping a column in SQL? (A) The column is dropped even if it is referenced in other tables. (B) The column cannot be dropped if it is being referenced in other tables. (C) The column is renamed instead of being dropped. (D) The column is dropped along with all dependent objects automatically.	
	Ans.	(B) OR The column cannot be dropped if it is being referenced in other tables. (1 Mark for the correct answer)	
	(iii)	In Java, which operator is used to access the data members and method members of an object? (A) equal (=) operator (B) plus (+) operator (C) dot (.) operator (D) comma (,) operator	
	Ans.	(C) OR dot (.) operator (1 Mark for the correct answer)	
	(iv)	Which SQL clause is used to sort data in ascending or descending order? (A) Order By (B) Sort By (C) Group By (D) Arrange By	

	Ans.	(A) OR Order By <i>(1 Mark for the correct answer)</i>	
	(v)	In the Requirement Definition Phase of a Web Application Project, defining the scope involves: (A) Designing the user interface (B) Listing features, goals, and project limitations (C) Writing and testing code (D) Deploying and managing the website	
	Ans.	(B) OR Listing features, goals, and project limitations <i>(1 Mark for the correct answer)</i>	
	(vi)	Consider the Java statement Book book1=new Book(); where Book is a class. What is the role of the new keyword in the statement?	
	Ans.	The new keyword is used to create an object of the class Book. OR The new keyword is used to allocate memory to an object of class Book. OR The new keyword is used to create an instance of class Book. <i>(1 Mark for the correct answer or any other relevant answer)</i>	

SECTION B

(Subjective Type Questions)

(30 Marks)

Answer any 3 out of the given 5 questions on Employability Skills. Answer each question in 20-30 words.			3x2=6
7.		"Listening skill is one of the most important skills in communication." Mention any two points to support this statement.	2
	Ans.	<p>Listening skill is one of the most important skill in communication because it helps :</p> <ul style="list-style-type: none"> ● To obtain information - Listening allows us to gather important information during a conversation. ● To understand - Attentive listening ensures that messages are not misunderstood ● To enjoy - Attentive listening allows us to enjoy the messages or information ● To learn - Attentive listening allows us to learn and implement information ● To build and maintain relationships and to resolve conflicts. <p>(1 Mark each for mentioning any two correct points)</p>	
8.		Mention the steps to start LibreOffice Calc in Windows Operating System.	2
	Ans.	<p>Steps to start LibreOffice Calc:</p> <p>Step - 1 : Click on Start button in the Task Bar</p> <p>Step -2 : Select All Programs</p> <p>Step -3 : Select Libre Office</p> <p>Step -4 : Click on Libre Office Calc</p> <p>OR</p> <p>Step - 1 :Type LibreOffice Calc in Windows search bar.</p> <p>Step - 2 :Select LibreOffice Calc from the search results. LibreOffice Calc will open a blank spreadsheet.</p> <p>OR</p> <p>Step -1 : Double-Click on LibreOffice Calc Icon on the Desktop.</p> <p>(2 Marks for correct answer or any relevant method)</p>	

9.		Define green jobs and state any one benefit of green jobs.	1+1=2
	Ans.	<p>A green job is defined as one that helps bring about and maintain transition to environmentally sustainable forms of production and consumption.</p> <p>Benefits of green jobs</p> <ul style="list-style-type: none"> • increase the efficiency of energy and raw material. • reduce greenhouse gas emissions. • control waste and pollution. • protect and restore ecosystems. • support adaptation to the effects of climate change. <p>(1 Mark for the correct definition /relevant definition) (1 Mark for any correct benefit/ relevant benefit of green jobs)</p>	
10		Write two benefits of having a positive attitude.	2
	Ans.	<p>Benefits of having a positive attitude are:</p> <ul style="list-style-type: none"> • Makes a person happier • Helps to build and maintain relationships • Increases chances of success • Better decision making Improve mental and physical health <p>(1 Mark each for mentioning any two correct points / any relevant points)</p>	
11		Write any two benefits of goal setting by an entrepreneur.	1+1=2
	Ans.	<p>Benefits of goal setting by an entrepreneur :</p> <ul style="list-style-type: none"> • Goal setting motivates the entrepreneur to work harder. • It provides direction and helps put in more effort to reach the goal. • It gives fulfillment and pride. • It sets a clear benchmark for success. <p>(1 Mark each for mentioning any two correct points / any relevant points)</p>	

Answer any 3 out of the given 5 questions in 20-30 words each.			3x2=6
12		<p>Write the output of the following Java code:</p> <pre> public class SumClass { public static void main(String[] args) { int x, y, sum; x= 5; y = 5; sum = x + y++; System.out.println("y = " + y); System.out.println("sum = " + sum); } } </pre>	2
	Ans.	<p>y = 6 sum = 10</p> <p>(1 Mark for each correct line) (½ mark to be deducted if only values are given)</p>	
13		Write one similarity and one difference between CHAR and VARCHAR data types in SQL.	1+1=2
	Ans.	<p>Similarity : Both CHAR and VARCHAR store character strings (text data) in a database.</p> <p>Difference : CHAR is of fixed length , while VARCHAR is of variable length.</p> <p>OR</p> <p>CHAR datatype leads to memory wastage whereas VARCHAR does not waste memory.</p> <p>(1 Mark for the correct similarity / relevant answer) (1 Mark for the correct difference/ relevant answer)</p>	
14		Mention any two uses of database management systems in banking sector.	1+1=2

	Ans.	<p>Two uses of database management system in banking sector:</p> <ul style="list-style-type: none"> • Storing customer information (personal details, accounts, transactions) • Storing employee details (salary, leaves, joining date) • Organizing data efficiently • Ensure high level data security • Transaction Integrity • Instantaneous data retrieval for many users simultaneously • Enable real-time consistency in transactions • 24x7 availability • Robust backup / recovery to prevent data loss <p>(1 Mark each for mentioning any two correct points / any other relevant points)</p>	
15		<p>Write a Java program to perform the following tasks:</p> <ul style="list-style-type: none"> • Store an employee's basic salary of ₹50,000 in a variable named basicSalary. • Calculate the dearness allowance (DA) as 50% of the basic salary and store it in a variable named allowance. • Add the dearness allowance to the basic salary to compute the total salary and store the result in a variable named totalsalary. • Display the value of total salary. 	2
	Ans.	<pre>public class EmployeeSalary{ public static void main(String[] args) { int basicSalary = 50000; //step-1 int allowance = 50/100 * basicSalary; //step-2 int totalSalary = basicSalary + allowance; //step-3 System.out.println(totalSalary); //step-4 } }</pre> <p>(½ Mark for each correct step) (Note: Ignore data type for the variables)</p>	
16	(a)	Write SQL query to display the list of all the tables stored in a database	1+1=2
	Ans.	<p>SHOW TABLES;</p> <p>(1 Mark for the correct query statement) (Note: Ignore cases and semicolon)</p>	
	(b)	Define Primary Key with respect to DBMS.	

	Ans.	A Primary Key is a column (or a set of columns) in a table/relation that uniquely identifies each record. It does not allow NULL values. (1 Mark for the correct definition/ any relevant definition)																					
Answer any 2 out of the given 3 questions in 30 - 50 words each.			2x3=6																				
17		<p>Consider the following table Employee:</p> <p>Table: Employee</p> <table border="1"> <thead> <tr> <th>EmpID</th><th>Name</th><th>Department</th><th>Salary</th></tr> </thead> <tbody> <tr> <td>101</td><td>Rajesh</td><td>HR</td><td>50000</td></tr> <tr> <td>102</td><td>Anjali</td><td>IT</td><td>60000</td></tr> <tr> <td>103</td><td>Suresh</td><td>Finance</td><td>55000</td></tr> <tr> <td>104</td><td>Priya</td><td>Marketing</td><td>52000</td></tr> </tbody> </table> <p>Write the SQL commands to:</p>	EmpID	Name	Department	Salary	101	Rajesh	HR	50000	102	Anjali	IT	60000	103	Suresh	Finance	55000	104	Priya	Marketing	52000	1+1+1 =3
EmpID	Name	Department	Salary																				
101	Rajesh	HR	50000																				
102	Anjali	IT	60000																				
103	Suresh	Finance	55000																				
104	Priya	Marketing	52000																				
	(a)	Update the Name of the employee with EmpID 102 to " Ananya "																					
	Ans.	UPDATE Employee SET Name = "Ananya" WHERE EmpID = 102; (1 Mark for the correct query statement) (½ Mark for UPDATE keyword and ½ for correct WHERE clause)																					
	(b)	Display the structure of the Employee table.																					
	Ans.	DESC Employee; OR DESCRIBE Employee; (1 Mark for the correct query statement) (½ Mark for DESCRIBE or DESC keyword Only)																					
	(c)	Add a new column JoiningDate of type DATE to the Employee table.																					
	Ans.	ALTER TABLE Employee ADD JoiningDate DATE; OR ALTER TABLE Employee ADD COLUMN JoiningDate DATE; (1 Mark for the correct query statement) (½ Mark for ALTER TABLE keyword and ½ for correct ADD clause)																					

18		<p>Rewrite the following Java program using while loop:</p> <pre> public class Monuments { public static void main(String[] args) { for (int i = 0; i < 5; i++) { if (i % 2 == 0) System.out.println("Monument-1: Taj Mahal"); else System.out.println("Monument-2: Gateway of India"); System.out.println("Monuments of India"); } } } </pre>	3
	Ans.	<pre> public class Monuments { public static void main(String[] args) { int i=0; //step - 1 while(i < 5){ //step - 2 if (i % 2 == 0) System.out.println("Monument-1: Taj Mahal"); else System.out.println("Monument-2: Gateway of India"); System.out.println("Monuments of India"); i++; //step - 3 } } } </pre> <p>(1 Mark for each correct step)</p>	

19		<p>A group of students is developing a Hospital Management System as their project. Ravi, one of the project members, has been assigned database-related tasks. He needs to create a table named Patient with the following schema:</p> <p>Schema: Patient (PatientID, PatientName, DateOfBirth)</p> <p>Note: PatientID is a 5-digit number.</p> <p>Help Ravi by completing the table given below. Write the Attribute Name in the first column and corresponding appropriate Data Type in the second column.</p> <table><tr><th>Attribute Name</th><th>Data Type</th></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>	Attribute Name	Data Type							3
Attribute Name	Data Type										
	Ans.	<table><tr><th>Attribute Name</th><th>Data Type</th></tr><tr><td>PatientID</td><td>INT(5) / CHAR(5)</td></tr><tr><td>PatientName</td><td>VARCHAR(20) / CHAR(20)</td></tr><tr><td>DateOfBirth</td><td>DATE</td></tr></table> <p>(1 Mark each for data type for corresponding attribute name)</p>	Attribute Name	Data Type	PatientID	INT(5) / CHAR(5)	PatientName	VARCHAR(20) / CHAR(20)	DateOfBirth	DATE	
Attribute Name	Data Type										
PatientID	INT(5) / CHAR(5)										
PatientName	VARCHAR(20) / CHAR(20)										
DateOfBirth	DATE										
Answer any 3 out of the given 5 questions in 50-80 words each.			3x4=12								
20	(a)	<p>The following Java code contains errors. Rewrite it correctly, clearly underlining all the corrections made:</p> <pre>public class JavaProg { public static void main(String[] args) { int a = 0; b = 15; do (a = a + 3; b = b - 3;) While (a <= b) } }</pre>	2+2=4								

	Ans.	<pre> public class JavaProg { public static void main(String[] args) { int a = 0; <u>int b = 15;</u> <u>do {</u> a = a + 3; b = b - 3; <u>} while (a <= b);</u> } } </pre> <p>Correction - 1: b =15; changed to int b = 15; Correction - 2: do (changed to do { Correction - 3: While changed to while Correction - 4: Added semicolon after while (a <= b) <i>(½ Mark for each correction)</i></p>	
	(b)	<p>What will be the output of the following Java program when executed?</p> <pre> public class CalculateN { public static void main(String[] args) { int n = 0, m = 4; for (int i = m+5; i >= 6; i--) { if (i % 3 == 0) { n = n + i; } else { n = n - i ; } System.out.println("n = " + n); } } } </pre>	
	Ans.	<p>n = 9 n = 1 n = -6 n = 0</p> <p><i>(½ Mark each for correct line of output)</i> OR <i>(1 Mark if the values are given without mentioning n)</i> <i>(Note: Deduct ½ marks if the output is given in one line)</i></p>	
21	(a)	Write any two advantages of using Online Reservation System.	4

	Ans.	<p>Advantages of online reservation system are:</p> <ul style="list-style-type: none"> • Convenience • Price comparison • Security • Confirmation of reservation • Cost and Time saving • Discount scheme • 24/7 availability • Real-Time Efficiency • Wider reach and selection • Global Access <p>(1 Mark for any two correct points)</p>	
	(b)	Mention any two precautions that should be taken while performing Online Transaction.	
	Ans.	<p>Two precautions that should be taken while performing online transactions are:</p> <ul style="list-style-type: none"> • Use Strong Passwords : Combine uppercase, lowercase, numbers, and special characters. • Keep Passwords Confidential : Do not share or leave them unattended. • Avoid Personal Names as password : Do not use names of family or friends as password. • Be careful about fraudulent websites. • Do not share confidential information with anyone. <p>(1 Mark for any two correct points)</p>	
22		<p>Explain the following terms in context of Java:</p> <p>(a) Class</p> <p>(b) Exception</p> <p>(c) Array</p> <p>(d) Constructor</p>	4

	<p>Ans. (a) Class: A class is an entity that has attributes (data members) and methods (behavior).</p> <p>OR</p> <p>It is a template from which objects are created.</p> <p>OR</p> <p>Eg. <code>Book book1=new Book();</code></p> <p>(b) Exception: An event that disrupts normal program flow and causes the program to terminate unexpectedly.</p> <p>OR</p> <p>An error situation that is unexpected in the program execution and causes it to terminate unexpectedly.</p> <p>OR</p> <p>Run-time Error.</p> <p>OR</p> <p>Eg. <code>try { int[] myNumbers = {1, 2, 3}; System.out.println(myNumbers[10]); } catch (Exception e) { System.out.println("Something went wrong."); }</code></p> <p>(c) Array: A collection of elements of the same data type stored in contiguous memory.</p> <p>OR</p> <p>Arrays are variables that can hold more than one value of the same data type.</p> <p>OR</p> <p><code>int[] myNumbers = {1, 2, 3};</code></p> <p>(d) Constructor: Special method that is called automatically when an object is created.</p> <p>OR</p> <p>It is used to initialize objects when they are created.</p> <p>OR</p> <p>Constructor is a method that has the same name as class name with no return type.</p>	
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		<p>OR</p> <p>Eg. <code>Book book1=new Book();</code></p> <p>(1 Mark for each correct definition/ any other relevant definition)</p> <p>OR</p> <p>(½ mark each if only example given)</p>	
23	(a)	<p>What will be the output of the following Java program when executed?</p> <pre> public class StringOperations { public static void main(String[] args) { String mystring = "JavaProgram"; System.out.println(mystring.toLowerCase()); System.out.println(mystring.replace("Java", "Python-")); } } </pre>	2 + 2=4
	Ans	<p>javaprogram</p> <p>Python-Program</p> <p>(1 Mark for each correct line of output)</p>	
	(b)	<p>Write a user-defined Java method circleArea() that takes the radius of the circle as input and returns its area</p> <p>(Note: take the value of $\text{Pi}(\pi)$ as 3.14)</p>	
	Ans.	<pre> public static double circleArea(double radius) { double Pi=3.14; double area = Pi * radius * radius; return area; } </pre> <p>OR</p>	

		<pre>public static double circleArea(double radius) { double area = 3.14 * radius * radius; return area; }</pre> <p>(½ Mark for correct function header with parameter)</p> <p>(½ Mark for declaring the Variable(s))</p> <p>(½ Mark for giving correct statement to calculate area)</p> <p>(½ Mark for correct return statement)</p>																																									
24		<p>Consider the following table STOCK:</p> <p>Table:STOCK</p> <table><tr><th>ItemNo</th><th>ItemName</th><th>DealerCode</th><th>Qty</th><th>UnitPrice</th></tr><tr><td>5001</td><td>ERASER SMALL</td><td>103</td><td>120</td><td>5</td></tr><tr><td>5002</td><td>GEL PEN PREMIUM</td><td>101</td><td>125</td><td>25</td></tr><tr><td>5003</td><td>BALL PEN 0.25</td><td>102</td><td>150</td><td>15</td></tr><tr><td>5006</td><td>ERASER BIG</td><td>103</td><td>100</td><td>10</td></tr><tr><td>5009</td><td>BALL PEN 0.5</td><td>102</td><td>100</td><td>10</td></tr><tr><td>5015</td><td>GEL PEN CLASSIC</td><td>101</td><td>200</td><td>20</td></tr><tr><td>5019</td><td>SHARPENER CLASSIC</td><td>104</td><td>110</td><td>5</td></tr></table> <p>Write SQL queries for the following requirements:</p>	ItemNo	ItemName	DealerCode	Qty	UnitPrice	5001	ERASER SMALL	103	120	5	5002	GEL PEN PREMIUM	101	125	25	5003	BALL PEN 0.25	102	150	15	5006	ERASER BIG	103	100	10	5009	BALL PEN 0.5	102	100	10	5015	GEL PEN CLASSIC	101	200	20	5019	SHARPENER CLASSIC	104	110	5	1+1+1 +1=4
ItemNo	ItemName	DealerCode	Qty	UnitPrice																																							
5001	ERASER SMALL	103	120	5																																							
5002	GEL PEN PREMIUM	101	125	25																																							
5003	BALL PEN 0.25	102	150	15																																							
5006	ERASER BIG	103	100	10																																							
5009	BALL PEN 0.5	102	100	10																																							
5015	GEL PEN CLASSIC	101	200	20																																							
5019	SHARPENER CLASSIC	104	110	5																																							
	(a)	Retrieve all details of items from STOCK table, stored in ascending order of UnitPrice .																																									
	Ans.	SELECT * FROM STOCK ORDER BY UnitPrice; <i>(1 Mark for the correct Query)</i> OR <i>(½ Mark for correct SELECT and ½ Mark for correct WHERE clause)</i>																																									
	(b)	Display ItemNo and ItemName for those items in the Stock table whose QTY exceeds 102																																									

	Ans.	SELECT ItemNo, ItemName FROM STOCK WHERE Qty > 102; (1 Mark for the correct Query) OR (½ Mark for correct SELECT and ½ Mark for correct WHERE clause)	
	(c)	Retrieve all details of items from the STOCK table, where Dealercode is 102 or UnitPrice is less than 20	
	Ans.	SELECT * FROM STOCK WHERE Dealercode = 102 OR UnitPrice < 20; (1 Mark for the correct Query) OR (½ Mark for correct SELECT and ½ Mark for correct WHERE clause)	
	(d)	Display each Dealercode along with the count of ItemName supplied by that dealer	
	Ans.	SELECT Dealercode, count(ItemName) FROM STOCK GROUP BY ItemName; (1 Mark for the correct Query) OR (½ Mark for correct SELECT and ½ Mark for correct GROUP BY clause)	