

Strictly Confidential: (For Internal and Restricted use only)
Senior Secondary School Term II Examination, 2022
Marking Scheme - INFORMATICS PRACTICES (SUBJECT CODE - 065)
(PAPER CODE -90)

General Instructions :

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 the 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 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 marks be awarded to them. In class-XII, while evaluating two competency based questions, please try to understand the given answer and even if reply is not from the marking scheme but correct competency is enumerated by the candidate, marks should be awarded.**
4. 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. 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.
5. Evaluators will mark(✓) wherever the answer is correct. For wrong answer ‘X’ be marked. Evaluators will not put the right kind of mark while evaluating which gives an impression that the answer is correct and no marks are awarded. **This is the most common mistake which evaluators are committing.**
6. 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.
7. 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.
8. If a student has attempted an extra question, the answer of the question deserving more marks should be retained and the other answer scored out.
9. No marks to be deducted for the cumulative effect of an error. It should be penalized only once.
10. A full scale of marks **35** (example **0-35** marks as given in Question Paper) has to be used. Please do not hesitate to award full marks if the answer deserves it.
11. Every examiner has to necessarily do evaluation work for full working hours i.e. 8 hours every day and evaluate 30 answer books per day in main subjects and 35 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 the question paper.
12. Ensure that you do not make the following common types of errors committed by the Examiner in the past :
 - Leaving the 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 a reply.
 - 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.
 - 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 answers.)
 - Half or a part of the answer was marked correct and the rest as wrong, but no marks awarded.
13. 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.
14. 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.
15. The Examiners should acquaint themselves with the guidelines given in the Guidelines for spot Evaluation before starting the actual evaluation.
16. 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.
17. The Board permits candidates to obtain a photocopy of the Answer Book on request in an RTI application and also separately as a part of the re-evaluation process on payment of the processing charges.

Specific Instructions:

- In SQL related questions - both ways of text/character entries should be acceptable. For example: "AMAR" and 'amar' both are acceptable.
- In SQL related questions - all date entries should be acceptable. For example. 'YYYY-MM-DD', 'YY-MM-DD', 'DD-Mon-YY', "DD/MM/YY", 'DD/MM/YY', "MM/DD/YY", 'MM/DD/YY' and {MM/DD/YY} are correct.
- In SQL related questions - semicolon should be ignored for terminating the SQL statements
- In SQL related questions, ignore case sensitivity.
- In SQL related output questions, ignore Column Headings.

Q. No.			Marks
		SECTION–A (Each question carries 2 marks)	
1.		Rushil thought "WWW" and "Internet" are synonyms i.e., they meant same and can be used interchangeably. But the teacher said that they are not same. Help him to understand the meaning of both the terms with the help of a suitable example of each.	2
	Ans	The Internet is a system of linked networks that are worldwide in scope and facilitate data communication services such as remote login, file transfer, electronic mail, the World Wide Web and newsgroups. OR It is a network of networks spread across the globe, all of which are connected to each other. OR The Internet is a public network of devices like desktop computers, laptops, servers, tablets, mobile phones, other handheld devices, printers, scanners	

		<p>etc. Example: Network of computers to perform E-commerce, E-Governance etc.</p> <p>WWW can be defined as a hypertext information retrieval system on the Internet. OR WWW is the universe of the information available on the internet. OR WWW consists of web pages, which use HTML to interchange information on the internet. OR The World Wide Web (WWW) or web in short is a collection of information stored in the form of hyperlinked web pages and web resources. Example, www.google.com</p> <p><i>(½ mark for writing each correct explanation of Internet and WWW)</i> <i>(½ mark each for writing any correct example of Internet and WWW)</i></p>	
		<p style="text-align: center;">OR</p> <p>What are Cookies? How can we disable Cookies?</p>	
	Ans	<p>This is a small text file which contains the name of the website that it has come from and a unique ID tag. OR A cookie is a text file created by the web server while browsing websites and gets stored on the user's computer.</p> <p>We can disable cookies by changing the Privacy and Security settings of the browser. OR We can disable cookies by selecting the Do Not Allow option when prompted whether to allow cookies for a website.</p> <p><i>(1 mark for writing correct definition of cookie)</i> <i>(1 mark for writing correct way to disable cookies)</i></p>	
2	(i)	What is the function of a Gateway?	1
	Ans	<p>A gateway is a network device that establishes an intelligent connection between a local network and external networks with completely different structures OR It is a network device that connects two dissimilar networks.</p> <p><i>(1 mark for writing any correct functionality of a Gateway)</i></p>	

	(ii)	Give examples of any two plug-ins.	1
	Ans	Java, Flash, Adobe Acrobat, Quicktime NOTE: Any other valid name for plug-ins to be accepted. <i>(½ mark each for writing each correct example)</i> OR <i>(½ mark each for writing correct explanation of plug-in without example)</i>	
3		Find the output of the following SQL Queries : (i) <code>SELECT ROUND (7658.345,2) ;</code> (ii) <code>SELECT MOD (ROUND (13.9, 0) , 3) ;</code>	2
	Ans	(i) 7658.35 (ii) 2 <i>(1 mark for writing each correct output)</i>	
		OR Give any two differences between the POWER() and SUM() SQL functions.	
	Ans	POWER() returns the value of a number raised to the power of another number, while SUM() returns the sum of the values stored in a specific column. POWER() is a single row function while SUM() is a group/aggregate function. POWER() accepts two parameters while SUM() accepts one parameter. <i>(1 mark each for writing each of the two correct differences)</i> OR <i>(1 mark for explaining any of the power() OR sum())</i> NOTE: <i>(Full 2 marks to be given if difference is explained with the help of examples of each function)</i>	
4		Give one advantage and disadvantage each of Bus and Star Topology.	2
	Ans	Advantage of BUS Topology : Minimum cable length required Disadvantage of BUS Topology : If there is any problem in the main cable the entire network fails. Advantage of STAR Topology : Considered faster than other topologies, as each device is directly connected with the central hub/device.	

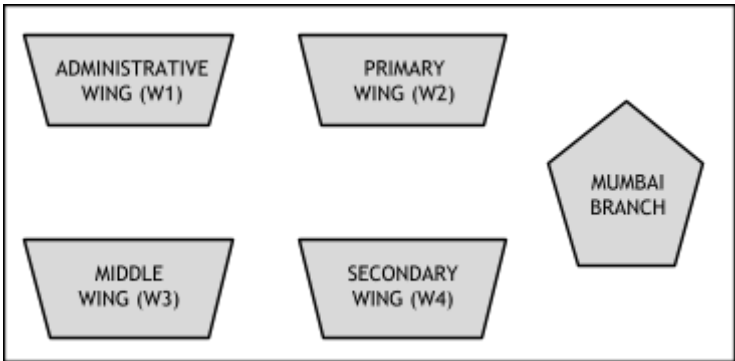
		Disadvantage of STAR Topology : More cable length is required compared to Bus topology. NOTE: Any valid advantage, disadvantage of Star and Bus topology to be accepted. <i>(½ mark for writing any one correct advantage of Bus Topology)</i> <i>(½ mark for writing any one correct disadvantage of Bus Topology)</i> <i>(½ mark for writing any one correct advantage of Star Topology)</i> <i>(½ mark for writing any one correct disadvantage of Star Topology)</i> OR <i>(1 mark for drawing only the topology layouts without explaining the advantages and disadvantages)</i>																																	
5		Find the output of the following SQL queries: (i) <code>SELECT SUBSTR ("FIT INDIA MOVEMENT", 5) ;</code> (ii) <code>SELECT INSTR ("ARTIFICIAL INTELLIGENCE", "IA") ;</code>	2																																
	Ans	(i) <code>INDIA MOVEMENT</code> (ii) <code>8</code> <i>(1 mark for writing each correct output)</i>																																	
6		Srikanth created the following table STUDENT in his database. Table : STUDENT <table border="1"> <thead> <tr> <th>RollNo</th><th>Name</th><th>Class</th><th>Marks</th></tr> </thead> <tbody> <tr><td>1</td><td>Ritika</td><td>12</td><td>40</td></tr> <tr><td>2</td><td>Angad</td><td>12</td><td>35</td></tr> <tr><td>3</td><td>Kaveri</td><td>11</td><td>42</td></tr> <tr><td>4</td><td>Lalitha</td><td>12</td><td>21</td></tr> <tr><td>5</td><td>Daniel</td><td>11</td><td>44</td></tr> <tr><td>6</td><td>Rabindra</td><td>11</td><td>39</td></tr> <tr><td>7</td><td>Rabia</td><td>11</td><td>28</td></tr> </tbody> </table> He now wants to count number of students in each class where the number of students is more than 3. He has executed the following query : <code>SELECT MAX (Marks) FROM STUDENT WHERE COUNT (*) > 3 GROUP BY Class;</code> But, he got an error. Identify the error(s) and rewrite the query. Also underline the correction(s) done.	RollNo	Name	Class	Marks	1	Ritika	12	40	2	Angad	12	35	3	Kaveri	11	42	4	Lalitha	12	21	5	Daniel	11	44	6	Rabindra	11	39	7	Rabia	11	28	
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6	Rabindra	11	39																																
7	Rabia	11	28																																
	Ans	<code>SELECT <u>CLASS</u>, <u>COUNT(*)</u> FROM STUDENT</code> <code><u>GROUP BY</u> CLASS <u>HAVING</u> COUNT (*) > 3;</code> OR <code>SELECT <u>COUNT(*)</u> FROM STUDENT</code> <code><u>GROUP BY</u> CLASS <u>HAVING</u> COUNT (*) > 3;</code> NOTE: <code>COUNT ()</code> to be accepted with any column name in place of *																																	

		(1 mark for writing <code>SELECT COUNT(*) FROM STUDENT</code>) (½ mark for writing <code>GROUP BY CLASS</code>) (½ mark for writing <code>HAVING COUNT (*) > 3</code>)																																																		
7		Ms Mohini is working in a school and stores the details of all students in a table SCHOOLDATA. TABLE : SCHOOLDATA <table><tr><th>Admno</th><th>Name</th><th>Class</th><th>House</th><th>Percent</th><th>Gender</th><th>Dob</th></tr><tr><td>20150001</td><td>Aditya Das</td><td>10</td><td>Green</td><td>86</td><td>Male</td><td>2006-02-20</td></tr><tr><td>20140212</td><td>Harsh Sharma</td><td>11</td><td>Red</td><td>75</td><td>Male</td><td>2004-10-05</td></tr><tr><td>20090234</td><td>Swapnil Pant</td><td>10</td><td>Yellow</td><td>84</td><td>Female</td><td>2005-11-21</td></tr><tr><td>20130216</td><td>Soumen Rao</td><td>9</td><td>Red</td><td>91</td><td>Male</td><td>2006-04-10</td></tr><tr><td>20190227</td><td>Rahil Arora</td><td>10</td><td>Blue</td><td>70</td><td>Male</td><td>2005-05-14</td></tr><tr><td>20120200</td><td>Akasha Singh</td><td>11</td><td>Red</td><td>64</td><td>Female</td><td>2004-12-16</td></tr></table>	Admno	Name	Class	House	Percent	Gender	Dob	20150001	Aditya Das	10	Green	86	Male	2006-02-20	20140212	Harsh Sharma	11	Red	75	Male	2004-10-05	20090234	Swapnil Pant	10	Yellow	84	Female	2005-11-21	20130216	Soumen Rao	9	Red	91	Male	2006-04-10	20190227	Rahil Arora	10	Blue	70	Male	2005-05-14	20120200	Akasha Singh	11	Red	64	Female	2004-12-16	2
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20120200	Akasha Singh	11	Red	64	Female	2004-12-16																																														
		Write SQL statements from the above given table to: (i) To remove leading spaces from the column name; (ii) Display the names of students who were born on Sunday.																																																		
	Ans	(i) <code>SELECT LTRIM (Name) FROM SCHOOLDATA;</code> (½ mark for writing <code>SELECT LTRIM (Name)</code>) (½ mark for writing <code>FROM SCHOOLDATA</code>)																																																		
		(ii) <code>SELECT NAME FROM SCHOOLDATA WHERE DAYNAME (DoB) = "Sunday";</code> (½ mark for writing <code>SELECT NAME FROM SCHOOLDATA</code>) (½ mark for writing <code>WHERE DAYNAME (DoB) = "Sunday"</code>)																																																		
		OR Predict the output of the following SQL queries from the above table : SCHOOLDATA (i) <code>SELECT MAX (Percent) FROM SCHOOLDATA;</code> (ii) <code>SELECT LEFT (Gender, 1), Name FROM SCHOOLDATA WHERE YEAR (Dob) = 2005;</code>																																																		
	Ans	(i) 91 (ii) F Swapnil Pant M Rahil Arora (1 mark for writing correct output for (i)) (½ mark for each correct line of output for (ii))																																																		
		SECTION–B (Each question carries 3 marks)																																																		
8		Predict the output of the following SQL queries :	3																																																	

		(i) SELECT TRIM (" ALL THE BEST "); (ii) SELECT POWER(5,2); (iii) SELECT UPPER (MID ("start up india", 10));																																					
	Ans	(i) ALL THE BEST (ii) 25 (iii) INDIA (1 mark for writing each correct output)																																					
		OR Consider a table “MYPET” with the following data : Table : MYPET <table><tr><th>Pet_id</th><th>Pet_Name</th><th>Breed</th><th>LifeSpan</th><th>Price</th><th>Discount</th></tr><tr><td>101</td><td>Rocky</td><td>Labrador Retriever</td><td>12</td><td>16000</td><td>5</td></tr><tr><td>202</td><td>Duke</td><td>German Shepherd</td><td>13</td><td>22000</td><td>10</td></tr><tr><td>303</td><td>Oliver</td><td>Bulldog</td><td>10</td><td>18000</td><td>7</td></tr><tr><td>404</td><td>Cooper</td><td>Yorkshire Terrier</td><td>16</td><td>20000</td><td>12</td></tr><tr><td>505</td><td>Oscar</td><td>Shih Tzu</td><td>NULL</td><td>25000</td><td>8</td></tr></table> Write SQL queries for the following : (i) Display the Breed of all the pets in uppercase. (ii) Display the total price of all the pets. (iii) Display the average life span of all the pets.	Pet_id	Pet_Name	Breed	LifeSpan	Price	Discount	101	Rocky	Labrador Retriever	12	16000	5	202	Duke	German Shepherd	13	22000	10	303	Oliver	Bulldog	10	18000	7	404	Cooper	Yorkshire Terrier	16	20000	12	505	Oscar	Shih Tzu	NULL	25000	8	
Pet_id	Pet_Name	Breed	LifeSpan	Price	Discount																																		
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404	Cooper	Yorkshire Terrier	16	20000	12																																		
505	Oscar	Shih Tzu	NULL	25000	8																																		
	Ans	(i) SELECT UPPER (Breed) FROM MYPET; OR SELECT UCASE (Breed) FROM MYPET; (½ mark for writing SELECT UPPER (Breed) OR SELECT UCASE (Breed)) (½ mark for writing FROM MYPET)																																					
		(ii) SELECT SUM (Price) FROM MYPET; (½ mark for writing SELECT SUM (Price)) (½ mark for writing FROM MYPET)																																					
		(iii) SELECT AVG (LifeSpan) FROM MYPET; (½ mark for writing SELECT AVG (LifeSpan)) (½ mark for writing FROM MYPET)																																					
9		Write the names of SQL functions to perform the following operations : (i) Display name of the Month from your date of birth. (ii) Convert email-id to lowercase. (iii) Count the number of characters in your name.	3																																				
	Ans	(i) MONTHNAME () (ii) LCASE ()/LOWER () (iii) LENGTH ()																																					

		NOTE: Only Function names, without () to be accepted (1 mark for writing each correct SQL function)																															
10		<p>Consider the following table: PRODUCT</p> <p style="text-align: center;">Table : PRODUCT</p> <table><tr><th>PID</th><th>PNAME</th><th>PRICE</th><th>QUANTITY</th></tr><tr><td>P1001</td><td>Eraser</td><td>10.50</td><td>5</td></tr><tr><td>P1002</td><td>Ball Pen</td><td>15.00</td><td>2</td></tr><tr><td>P1003</td><td>Gel Pen</td><td>25.10</td><td>3</td></tr><tr><td>P1004</td><td>Ruler</td><td>5.00</td><td>1</td></tr></table> <p>Find the output of the following SQL queries :</p> <p>(i) SELECT 10+MOD(QUANTITY,3) FROM PRODUCT WHERE PNAME = "Eraser";</p> <p>(ii) SELECT ROUND(PRICE, 2) *QUANTITY FROM PRODUCT WHERE QUANTITY > 2;</p> <p>(iii) SELECT UCASE(RIGHT(PNAME, 2)) FROM PRODUCT;</p>	PID	PNAME	PRICE	QUANTITY	P1001	Eraser	10.50	5	P1002	Ball Pen	15.00	2	P1003	Gel Pen	25.10	3	P1004	Ruler	5.00	1	3										
PID	PNAME	PRICE	QUANTITY																														
P1001	Eraser	10.50	5																														
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P1003	Gel Pen	25.10	3																														
P1004	Ruler	5.00	1																														
	Ans	<p>(i) 12</p> <p>(ii) 52.50 75.30</p> <p>(iii) ER EN EN ER</p> <p>(1 mark for writing each correct output)</p> <p>Note: (Only ½ mark to be awarded for (iii) if UCASE() is not considered for the output)</p>																															
		<p style="text-align: center;">SECTION–C (Each question carries 4 marks)</p>																															
11		<p>Consider the table: ITEM</p> <p style="text-align: center;">Table : ITEM</p> <table><tr><th>SNo</th><th>Itemname</th><th>Type</th><th>Price</th><th>Stockdate</th></tr><tr><td>1</td><td>Chaises</td><td>Living</td><td>11500.58</td><td>2020-02-19</td></tr><tr><td>2</td><td>Accent Chairs</td><td>Living</td><td>31000.67</td><td>2021-02-15</td></tr><tr><td>3</td><td>Baker Racks</td><td>Kitchen</td><td>25000.623</td><td>2019-01-01</td></tr><tr><td>4</td><td>Sofa</td><td>Living</td><td>7000.3</td><td>2020-10-18</td></tr><tr><td>5</td><td>Nightstand</td><td>Bedroom</td><td>NULL</td><td>2021-07-23</td></tr></table> <p>Write SQL queries for the following :</p> <p>(i) Display all the records in descending order of Stockdate.</p> <p>(ii) Display the type and total number of items of each Type.</p> <p>(iii) Display the least Price.</p> <p>(iv) Display the Itemname with their price rounded to 1 decimal place.</p>	SNo	Itemname	Type	Price	Stockdate	1	Chaises	Living	11500.58	2020-02-19	2	Accent Chairs	Living	31000.67	2021-02-15	3	Baker Racks	Kitchen	25000.623	2019-01-01	4	Sofa	Living	7000.3	2020-10-18	5	Nightstand	Bedroom	NULL	2021-07-23	4
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5	Nightstand	Bedroom	NULL	2021-07-23																													
	Ans	<p>(i) SELECT * FROM ITEM ORDER BY Stockdate DESC;</p>																															

		(½ Mark for writing SELECT * FROM ITEM) (½ Mark for writing ORDER BY Stockdate DESC)																																				
		(ii) SELECT Type, COUNT(*)FROM ITEM GROUP BY Type; NOTE: COUNT () to be accepted with any column name (except Price), in place of * (½ Mark for writing SELECT Type, COUNT(*)FROM ITEM) (½ Mark for writing GROUP BY Type)																																				
		(iii) SELECT MIN(PRICE) FROM ITEM; (½ Mark for writing SELECT MIN(PRICE)) (½ Mark for writing FROM ITEM)																																				
		(iv) SELECT Itemname, ROUND(Price, 1) FROM ITEM; (½ Mark for writing SELECT Itemname, ROUND(Price, 1)) (½ Mark for writing FROM ITEM)																																				
12		Consider the following table : <div>Table : SALESMAN<table><tr><th>Scode</th><th>Sname</th><th>Area</th><th>Qtysold</th><th>Dateofjoin</th></tr><tr><td>S001</td><td>Ravi</td><td>North</td><td>120</td><td>2015-10-01</td></tr><tr><td>S002</td><td>Sandeep</td><td>South</td><td>105</td><td>2012-08-01</td></tr><tr><td>S003</td><td>Sunil</td><td>NULL</td><td>68</td><td>2018-02-01</td></tr><tr><td>S004</td><td>Subh</td><td>West</td><td>280</td><td>2010-04-01</td></tr><tr><td>S005</td><td>Ankit</td><td>East</td><td>90</td><td>2018-10-01</td></tr><tr><td>S006</td><td>Raman</td><td>North</td><td>NULL</td><td>2019-12-01</td></tr></table></div> Predict the output for the following SQL queries : (i) SELECT MAX(Qtysold), MIN(Qtysold) FROM SALESMAN; (ii) SELECT COUNT(Area) FROM SALESMAN; (iii) SELECT LENGTH (Sname) FROM SALESMAN WHERE MONTH (Dateofjoin)=10; (iv) SELECT Sname FROM SALESMAN WHERE RIGHT(Scode,1)=5;	Scode	Sname	Area	Qtysold	Dateofjoin	S001	Ravi	North	120	2015-10-01	S002	Sandeep	South	105	2012-08-01	S003	Sunil	NULL	68	2018-02-01	S004	Subh	West	280	2010-04-01	S005	Ankit	East	90	2018-10-01	S006	Raman	North	NULL	2019-12-01	4
Scode	Sname	Area	Qtysold	Dateofjoin																																		
S001	Ravi	North	120	2015-10-01																																		
S002	Sandeep	South	105	2012-08-01																																		
S003	Sunil	NULL	68	2018-02-01																																		
S004	Subh	West	280	2010-04-01																																		
S005	Ankit	East	90	2018-10-01																																		
S006	Raman	North	NULL	2019-12-01																																		
	Ans	(i) 280 68 (½ Mark for each correct value of the output) (ii) 5 (1 Mark for the correct value of the output) (iii) 4 (½ Mark for each value of the output) 5 (iv) Ankit (1 Mark for the correct value of the output)																																				
		OR Based on the given table SALESMAN, write SQL queries to perform the following operations :																																				
	(i)	Count the total number of salesman.																																				
	Ans	(i) SELECT COUNT (*) FROM SALESMAN;																																				

		<p>NOTE: COUNT () to be accepted with any column name (except Qtysold) , in place of * (½ mark for writing SELECT COUNT (*)) (½ mark for writing FROM SALESMAN)</p>	
	(ii)	Display the maximum qty sold from each area.	
	Ans	<p>SELECT MAX (Qtysold) , Area FROM SALESMAN GROUP BY Area; OR SELECT Area, MAX (Qtysold) FROM SALESMAN GROUP BY Area; (½ mark for writing SELECT MAX (Qtysold) ,Area FROM SALESMAN) (½ mark for writing GROUP BY Area)</p>	
	(iii)	Display the average qty sold from each area where number of salesman is more than 1.	
	Ans	<p>SELECT AVG (Qtysold) , Area FROM SALESMAN GROUP BY Area HAVING COUNT (*) > 1; OR SELECT Area, AVG (Qtysold) FROM SALESMAN GROUP BY Area HAVING COUNT (*) > 1;</p> <p>NOTE: COUNT () to be accepted with any column name (except Qtysold) , in place of * (½ mark for writing SELECT AVG (Qtysold) ,Area FROM SALESMAN) (½ mark for writing GROUP BY Area HAVING COUNT (*) > 1)</p>	
	(iv)	Display all the records in ascending order of area.	
	Ans	<p>SELECT * FROM SALESMAN ORDER BY Area; (½ mark for writing SELECT * FROM SALESMAN) (½ mark for writing ORDER BY Area)</p>	
13		<p>ABC International School, Delhi has different wings Administrative Wing (W1), Primary Wing (W2), Middle Wing (W3) and Secondary Wing (W4) as shown in the diagram :</p> 	4

The school also has a branch in Mumbai. The school management wants to connect all the wings as well as all the computers of each wing (W1, W2, W3, W4).

Distance between the wings are as follows :

W3 to W1	85 m
W1 to W2	40 m
W2 to W4	25 m
W4 to W3	120 m
W3 to W2	150 m
W1 to W4	170 m

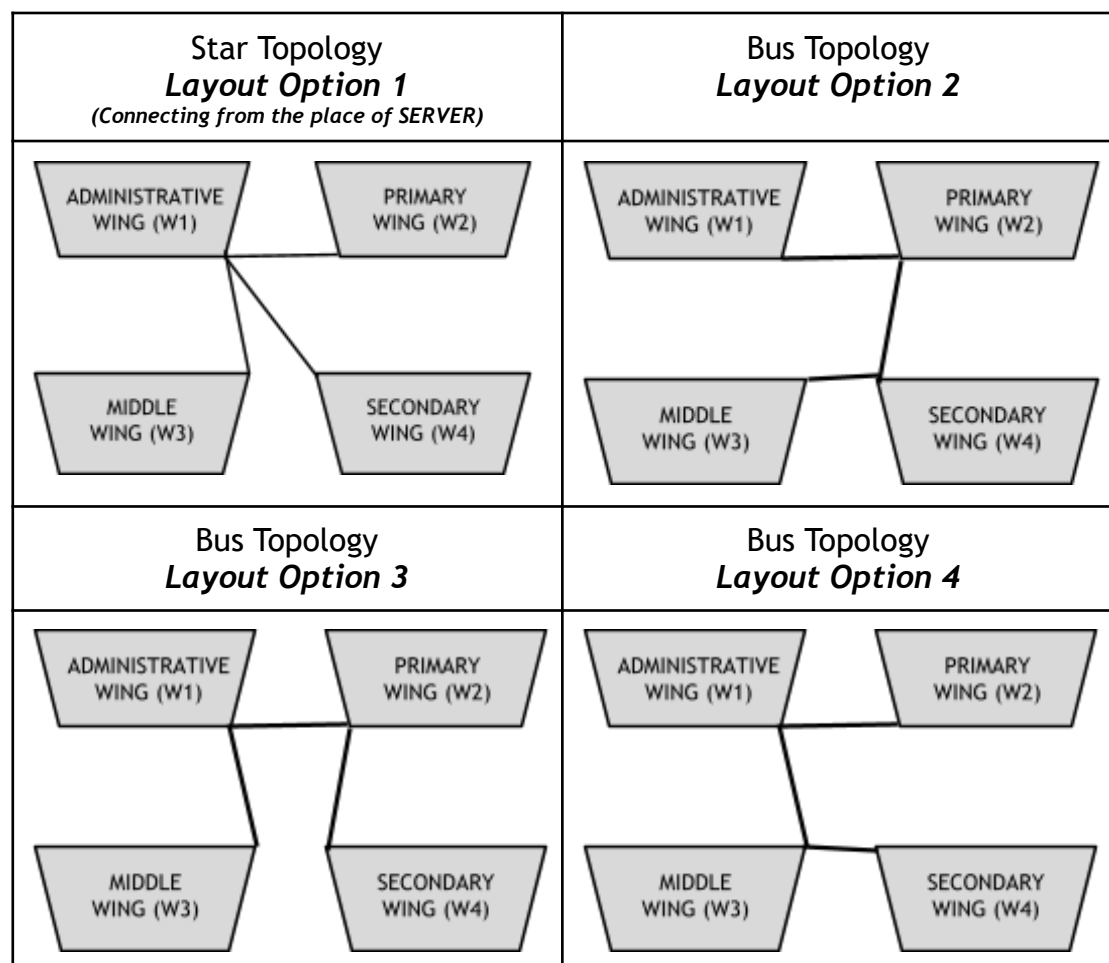
Number of computers in each of the wing:

W1	125
W2	40
W3	42
W4	60

Based on the above specifications, answer the following questions :

- (i) Suggest the topology and draw the most suitable cable layout for connecting all the wings of Delhi branch.

Ans



		<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>Bus Topology Layout Option 5</p> </div> <div style="text-align: center;"> <p>Bus Topology Layout Option 6</p> </div> </div> <p><i>(½ mark for writing the correct topology) (½ mark for drawing the correct layout)</i></p>	
	(ii)	Suggest the kind of network required (out of LAN, MAN, WAN) for connecting (a) Administrative Wing (W1) with Middle Wing (W3) (b) Administrative Wing (W1) with the Mumbai branch	
	Ans	<p>(a) LAN (b) WAN</p> <p><i>(½ mark for writing LAN for part (a)) (½ mark for writing WAN for part (b))</i></p>	
	(iii)	Suggest the placement of the following devices with justification: (a) Repeater (b) Switch/Hub	
	Ans	<p>(a) Repeater to be placed based on layout drawn in part(i), between two physically connected buildings wherever the distance between the two buildings is more.</p> <p>(b) Switch/Hub to be placed in all wings W1, W2, W3 and W4 as each of the buildings has more than one computer.</p> <p><i>(½ mark for writing each correct placement)</i></p>	
	(iv)	Due to pandemic school had to adopt Online classes. Suggest the protocol that is used for sending the voice signals over internet. Also, give an example of an application of WWW that helped the teachers to send messages instantly to the students.	
	Ans	<p>Protocol name : VoIP OR Voice Over Internet Protocol</p> <p>WhatsApp, Slack, Skype, Yahoo Messenger, Google Talk, Facebook Messenger, Google Hangout, Instant Messenger</p> <p>Any of the above or any other correct example of an application of WWW for instant messaging.</p> <p><i>(½ mark for VoIP) (½ mark for any one correct example)</i></p>	