

බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව மேல் மாகாணக் கல்வித் திணைக்களம் Department of Education - Western Province			
වර්ෂ අවසාන ඇගයීම - 2024 (2025) ஆண்டிறுதி மதிப்பீடு - 2024 (2025) Year End Evaluation - 2024 (2025)			
ශ්‍රේණිය தரம் Grade	10	විෂයය பாடம் Subject	Information and Communication Technology
		පත්‍රය வினாத்தாள் Paper	I
		කාලය காலம் Time	1 Hour
නම பெயர் Name		විභාග අංකය கட்டிலக்கம் Index No.	

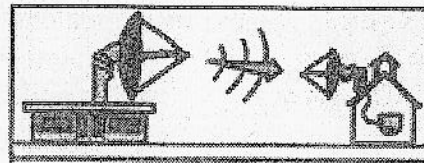


- * Answer all the questions. .
- * Choose the correct or most appropriate answer from the answers (1), (2), (3), (4) given in questions No. 1 to 40.
- * From the circles provided for each question on the answer sheet provided to you, put an (X) in the circle corresponding to the number of the answer you have chosen.

1. An example of data is
 - (1) A bill relating to goods purchased by a customer
 - (2) A person's National Identity Number
 - (3) Official website of a school
 - (4) Analysis of scores of students in a class
2. The machine that takes detailed images of the internal parts of the body using radio waves and strong magnetic resonance for diagnosis in the health field is,
 - (1) CRT machine
 - (2) MRI machine
 - (3) ECG machine
 - (4) EEG machine
3. Which of the following memories is not a primary memory?
 - (1) Flash Memory
 - (2) RAM
 - (3) ROM
 - (4) Cache Memory
4. Which statement is correct regarding computer generations?
 - (1) In first generation computers Power consumption is very low .
 - (2) the second generation computers , the mouse was used for data input .
 - (3) Integrated circuits were used to produce the third generation of computers .
 - (4) Fourth generation computers are based on artificial intelligence .
5. Consider the following computers used to connect external devices to the computer.
 - A - VGA Port
 - B - Serial Port
 - C - Parallel port
 - D - RJ 45 Port

Which of these computer ports are no longer commonly used today?

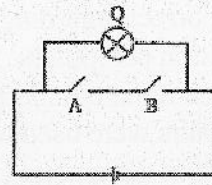
 - (1) A, B, Conly
 - (2) A and B only
 - (3) B and C only
 - (4) A ,B,C,D all
6. The data transmission medium shown in the diagram below is,,
 - (1) Radio waves
 - (2) Satellite transmission
 - (3) Infrared rays
 - (4) Microwaves



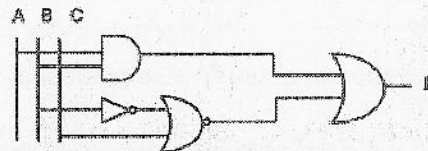
7. The table below lists computer printers and their specifications. Match the printer types (A, B, C) Left column with their correct descriptions (P, Q, R) Right side :

A - Dot matrix printers	P - Printing is done by injecting liquid ink onto the paper through small holes.
B - Laser printers	Q - Printing is done by dropping dry ink powder from a cartridge onto the paper.
C - Inkjet Printers	R - Printing occurs by pressing the print head firmly against the paper..

- (1) A - R, B - P, C - Q (2) A-Q, B-R, C-P
 (3) A- R, B- Q, C- P (4) A-Q, B-P, C-R
8. What type of memory stores the data and instructions required for the basic operation of a computer?
 (1) RAM (2) Hard disk (3) Register memory (4) ROM
9. Which of the following options is equivalent to the decimal number 53?
 (1) 1 010 11 (2) 110101₂ (3) 35₈ (4) DA₁₆
10. The binary result of a calculation is 100011₂. Which of the following could be the correct calculation?
 (1) 125-80 (2) 22+14 (3) 16+18 (4) 56-21
11. If the hexadecimal value C1 represents the character "A" in the EBCDIC encoding system, which of the following values is used to represent the character "D"?
 (1) 10110100 (2) 11000010 (3) 11000100 (4) 11001000
12. Which of the following is equivalent to two gigabytes (2 GB)?
 (1) 2 x 2²⁰ gigabytes (2) 2³⁴ bits (3) 2²² Kilobyte (4) Byte 2³¹
13. In storage strategies, which of the following lists the cost per bit of data storage in descending order?
 (1) Cache memory , magnetic tape , and hard disk
 (2) Hard disk , magnetic tape ,cache memory
 (3) magnetic tape , hard disk ,cache memory
 (4) cache memory , hard disk , magnetic tape
14. What is the logic gate equivalent to the following logic circuit?
 (1) AND gate
 (2) NOR gate
 (3) OR gate
 (4) NAND gate



15. The Boolean expression representing the output of the following logic circuit is , A, B, C are the inputs and F is the output.



- (1) $F = A.B + \bar{B} + \bar{C}$
 (2) $F = (A.B) + (\bar{B} + \bar{C})$
 (3) $F = (A.B) + ((\bar{B} + \bar{C}))$
 (4) $F = (A.B) + \bar{B} + \bar{C}$
16. Which gates are represented by the truth tables given below, respectively?

X	Y	Z	X	Y	Z
0	0	1	0	0	0
1	0	1	0	1	0
0	1	1	1	0	0
1	1	0	1	1	1

17. The fingerprint of the Chief Security Officer (B) or the Chief Executive Officer (C), along with the Bank Manager's fingerprint (A), is essential to open a safe in a bank. Which of the following logical expressions represents this security system?
- (1) A AND B OR C (2) A AND (B OR C)
(3) (A AND B) OR C (4) A OR B OR C
18. Which of the following functions is not performed by every operating system?
- (1) Computer memory management .
(2) Managing programs running on the computers .
(3) Manage devices connected to the computer.
(4) Protecting computer from computer viruses.
19. Which of the following software is not an operating system?
- (1) Linux (2) DOS (3) Windows (4) Oracle
20. Software that helps in analyzing other software installed on the computer and maintaining the computer is:
- (1) operating system (2) Utility software (3) BIOS (4) Antivirus software
21. Operating systems that can perform multiple tasks at the same time are called,
- (1) Multi-user operating systems
(2) Multiprogramming operating systems
(3) Multi Task operating systems
(4) Real Time Operating Systems
22. In word processing software, what does the Ctrl + B shortcut key do?
- (1) It changes the font size of the selected text to the next larger size.
(2) It adds a line break to the document .
(3) It makes the selected text bold .
(4) It makes the selected text Italic.
23. A software that can be used to open your document from any computer with internet access is:
- (1) Office 365 Word (2) Open Office Writer
(3) Word Perfect (4) Frame Maker
24. To perform tasks A to D using shortcut keys in word processing software, select the appropriate option below:
- A - Save a document .
B - Select the entire document.
C - Getting a new document .
D - Getting a print out.
- (1) Ctrl+S, Ctrl+N, Ctrl+A, Ctrl+P (2) Ctrl+P, Ctrl+N, Ctrl+A, Ctrl+S
(3) Ctrl+S, Ctrl+A, Ctrl+N, Ctrl+P (4) Ctrl+N, Ctrl+S, Ctrl+P, Ctrl+A
25. The types of lists that can be included in a document by word processing software are:
- (1) Bulleted List, Multilevel List, Ordered List
(2) Numbering List, Bulleted List, Multilevel List
(3) Unordered List, Multilevel List, Ordered List
(4) Bulleted List, Sub List, Ordered List
26. What components can be included in a document prepared with word processing software?
- A. Graphics B. Animations
C. Shapes D. Tables
- (1) A , B, Conly (2) A and B only (3) A,C and D only (4) A , B, C,D all

27. Which of the following components is not included in a slide layout of a presentation software?

- (1) Titles (2) List (3) Charts (4) Animations

28. Consider the following components that can be included in a presentation, by using presentation software

A - It is possible to add number of slide transitions to one Slide.

B - An animation added to a single item (object) in a slide can be changed as needed.

C - Audio and visual components can be include in to a presentation.

Above clauses out of is TRUE will be

- (1) Bonly (2) A and B only (3) B and C only (4) All of A, B and C

• To answer the Question No. 29,30,31, Consider the following spreadsheet section.

	C3		12/16/2010			
	A	B	C	D	E	F
1						
2		Average	Date			
3	David	356.6	16-Dec			
4	Mary	325.15				
5	Tom	290				
6	Sarah	460.358				
7						
8	Scientific notation example:			1.23E+11		
9						
10						
11						
12						
13						

29. What is the cell Range containing data

- (1) B2:D8 (2) A2:D8 (3) A1:A13 (4) A2:D13

30. What is the shortcut key to get the cell pointer to cell D8

- (1) Ctrl+End (2) Ctrl+A (3) Ctrl+Home (4) End

31. What is the function that can be used to find the number of cells which containing Numerical Data From A1 to D8

- (1) SUM (2) MAX (3) COUNT (4) AVERAGE

32. When enter Equation = $16/4*5+2^3$ into a spreadsheet cell, What is the answer.

- (1) 10 (2) 28 (3) 25 (4) 29

33. Which of the chart types used in spreadsheet software is appropriate for a single set of data?

- (1) xy graphs (2) pieCharts
(3) Bar charts (4) Column charts

34. Select column absolute cell address from below cell addresses.

- (1) A\$5 (2) \$A5 (3) \$A\$5 (4) A\$5\$

35. A characteristic of a quality database is:

- (1) Data consistency
- (2) Unnecessary duplication of data in database tables.
- (3) Consistency of data
- (4) Inefficiency in database handling



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Consider the following tables to answer Question No. 36 to 40.

Author (කර්තෘ විදුලි)

id	name	Email
1	John	john@gmail.com
2	Farid	farid@hotmail.com
3	Harvey Deitel, Paul Deitel	hdpd@outlook.com
4	Mari	mari@liu.edu.lb

Publish (ප්‍රකාශන විදුලි)

AuthorID	BookCode	PublishedDate
1	5	10/10/2020
4	3	2/6/2019
4	1	3/11/2021
1	1	1/1/2018

Book (පොත් විදුලි)

code	title	Nbpage	price
1	Programming with Java	512	50
3	DBMS	250	75
2	Python	300 pages	35
NULL	A+ Certificate	550	100

36. What is the error in the Book table?

- (1) No primary key
- (2) Title field longer
- (3) Null values in primary key field
- (4) Values in the primary key field are not in order

37. What can be the primary key of Publish table?

- (1) PublishedDate
- (2) AuthorID
- (3) BookCode
- (4) AuthorID+BookCode

38. Which of the following is an example of a foreign key in the above database?

- (1) Email in the Author table
- (2) BookCode in the Publish table
- (3) Code in the Book table
- (4) id in the Author table

39. What is the correct answer regarding the relationship between the Author table and the Book table?

- (1) One-to-one relationship
- (2) One-to-many relationship
- (3) Many-to-many relationship
- (4) Many-to-one relationship

40. What is the title of the book published on 2/6/2019 by the author Mari?

- (1) DBMS
- (2) Python
- (3) Programming with Java
- (4) A+Certificate

බස්නාහිර පළාත් අධ්‍යාපන දෙපාර්තමේන්තුව மேல் மாகாணக் கல்வித் திணைக்களம் Department of Education - Western Province							
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ශ්‍රේණිය தரம் Grade	10	විෂයය பாடம் Subject	Information and Communication Technology	පත්‍රය வினாத்தாள் Paper	II	කාලය காலம் Time	2 Hour
නම பெயர் Name							
විභාග අංකය சுட்டிலக்கம் Index No.							

- * Answer only five questions including the first question and four other selected questions.
- * The first question carries 20 marks and each other question carries 10 marks.

- (i) Write two advantages that e-banking systems provide to both business and the general public.
- (ii) Several statements related to the classification of computers by size are labeled A to D below.
 - A - Used to solve very complex mathematical problems.
 - B - Used by several users through several terminals.
 - C - Used in large commercial businesses and e-commerce.
 - D - Used for personal use with low memory capacity.

For each statement, write the corresponding computer type in front of the corresponding label number.
- (iii) Regarding Network Topologies, select the appropriate network topology corresponding to the following statements from the list provided and write it in front of the statement label.
 - (a) When one computer goes down, the entire network goes down.
 - (b) A complex network in which all the computers on the network are connected to each other.
 - (c) Networking allows each network to be controlled separately.
 - (d) A widely used, easy-to-debug, but expensive network to install.

list {bus topology, mesh topology, tree topology, star topology, ring topology}
- (iv) (a). Convert octal number 7638 to decimal number. Show your calculations.
 (b) Calculate and express the total capacity in bytes of two files, one with a size of 64 KB and the other with a size of 8 MB.
- (v) (a). Draw the logical circuit for the Boolean $Q = A.(\bar{A} + B)$
 (b). name a single gate, to above logical circuit by using a truth table.
- (vi) Select the word from column B that matches the words in column A
 Write only the number from column A and the corresponding letter from column B on the answer sheet.

Column A	Column B
1. Multi-user	P. MS DOS
2. Multi-task	Q. ATM machines
3. Real time	R. Mac OS
4. Single user	S. Linux

- (vii) Regarding word processing software, write "True" if the statement is true and "False" if the statement is false, followed by the relevant label in front of the statement.

A- In word processing software, different pages in a document can be set to different orientations.
B-In word processing software, hyperlinks can be added to a selected word in a document
C-During document creation, images, shapes, and other elements can be inserted anywhere in the document.

D-A picture cannot be used as a watermark in a document..

- (viii) In the spreadsheet below, identify the cell addresses corresponding to the labels R1, R2, and R3. Write the cell address for each range next to its respective label name.
- (ix) If you do not have an office suite installed on your computer, write down two presentation software programs that can be accessed via the Internet and use cloud services to complete your tasks..
- (x) Describe the many-to-many relationship that can exist between two tables in a relational database.

- (i) You Consider that you are provided with a desktop computer, a laptop computer, a tablet PC, and a smartphone. For each of the following s situations, write the relevant device in front of the label

P: For a mobile salesman to take orders from shops

Q: For the task of processing bills in a supermarket

R: For taking photographs on a field trip

S: For observing a field and recording relevant data

- (ii) Nowadays, online shopping is a very popular method.

(a) What is online shopping?

(b) Write two benefits that an organization can gain from online marketing.

(c) Write two steps that a customer should follow to engage in online shopping safely.

- (iii) Consider the list of secondary storage devices given below:

Hard disk, memory cards, digital Video-disk, magnetic tape, floppy disk, flash drive, compact disk.

Out of the above devices:

(a) Write two magnetic media devices.

(b) Write two optical media devices.

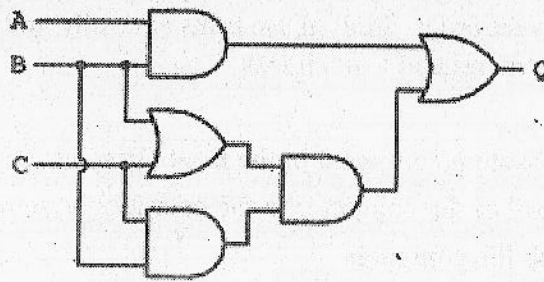
- (iii) The characters in the table below are presented using the ASCII character encoding system.

charactor	Decimal value
Line feed	10
Space	32
H	72
i	105
!	33

Accordingly, show in binary numbers how the word "Hi !" is represented in 7-bit ASCII encoding. Note that the word ends with a Line Feed character.

- (ii) Arrange the following storage devices in descending order of capacity:
DVD, magnetic tape, register memory , RAM

(c) The color code for dark purple is #871F78 in hexadecimal. What is its RGB code?



(ii) (a) Write the Boolean expression for the following logic circuit..

A	B	C	F
0	0	0	p
0	0	1	0
0	1	0	q
0	r	1	1
1	0	0	s
1	0	1	t
1	1	0	u
1	1	1	1

(b) Chemicals are used in a manufacturing process in a factory. The chemicals are stored in three different tanks. The level of the chemical in each tank is detected by three sensors. When the chemical level falls below a predetermined level, the sensor value is 0, and when it does not fall, the sensor value is 1.

It is required to design a logic circuit that monitors the chemical levels in the three tanks and sounds an alarm when the level in any two tanks falls below the predetermined level.

Complete the following incomplete truth table related to the operation of the circuit by indicating the Boolean values (1 or 0) from p to u as appropriate.

Sensor 01 – A

Sensor 02 – B

Sensor 03 – C

Alarm bell - F

Ring of the bell is indicated by 1 and non-ringing by 0

4. (i) (a) A computer consists of hardware, software, and firmware. Describe what firmware is.
 (b) The tasks that occur during the power-up of a computer are given below. However, these tasks are not listed in the correct order. Study these tasks carefully and indicate them in the correct order using only the label letters related to each task.

A - POST is run

B - The operating system contained in the Boot Drive accesses the main memory

C - Transfers control of the computer to the operating system

D - User powers up the computer

E - BIOS is loaded by the CPU

(c) Write two services performed by an operating system in file management.

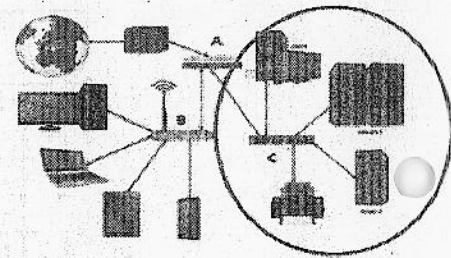
(d) What is the function performed by the Task Manager, a utility software present in an operating system?

- (ii) Consider the following diagram showing several devices used to connect computers to each other in a computer network.

(a) Name the devices represented by the letters A, B, and C in this diagram.

(b) Write the function of device C.

(c) What is the term used to describe the type of network shown in the circled area in the diagram above?



5. (i) Apart of a document prepared on 'Cloud Computing' is given below. In the document, several tools used in the ribbons related to each format are labeled with numbers from 1 to 12.

Task: Identify the tool/tools required for the formats shown in the document below and write only the relevant number(s) in front of the label letters. Using unnecessary tool numbers will result in your answers not being accepted.

A → **Cloud Computing**

Cloud Computing means storing and accessing the data and programs on remote servers that are hosted on the internet instead of the computer's hard drive or local server. Cloud computing is also referred to as internet-based computing, it is a technology where the resource is provided as a service through the internet to the user. The data that is stored can be files, images, documents, or any other storable document.

B →

What Are The Types of Cloud Computing Services?

1. Infrastructure as a Service (IaaS)
2. Platform as a Service (PaaS)
3. Software as a Service (SaaS)

C →

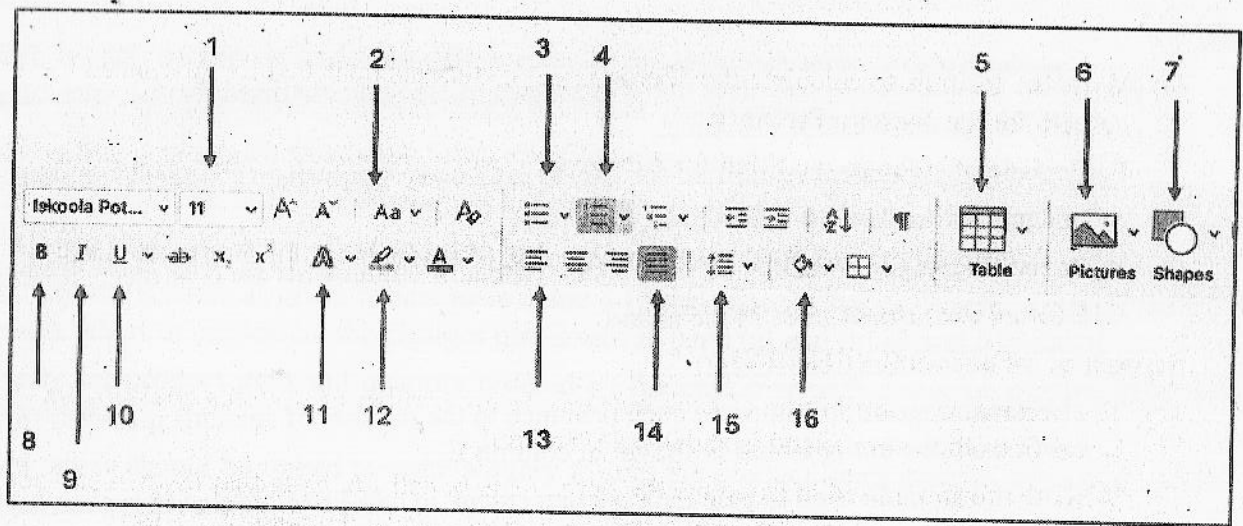
Advantages	Disadvantages
• Cost Efficiency	• Security Concerns
• Flexibility and Scalability	• Downtime and Reliability
• Collaboration and Accessibility	• Dependency on Internet Connectivity
• Automatic Maintenance and Updates	• Cost Management Complexity

E →

F →

D

G



- (ii) Complete the sentences in the given context regarding an electronic presentation by choosing the words from the given list that best fit the blanks.

(It is sufficient to choose the question number and the correct word from the given list and write only the correct word.)

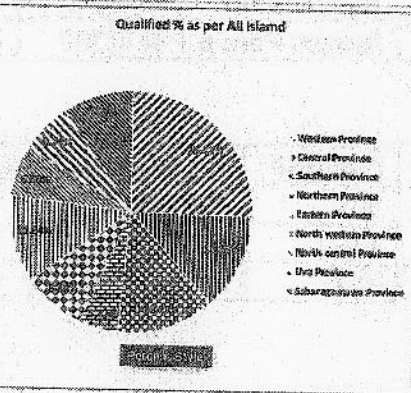
List of words: Slide animation, Ctrl + N, Slide show, Slide sorter view, Ctrl + M, Slide transition

- (a) Rearranging the order of slides can be done using
- (b) Visual movements applied to a single object contained within a slide are called
- (c) When moving from one visual frame to another, ... can be applied to the entire slide.
- (d) To get a new slide for the presentation, ... shortcut key combination is used.

6. The following spreadsheet contains information on an analysis of the performance of school candidates who sat for the 2023 G.C.E. (Ordinary Level) examination by province.

Answer the questions below based on the spreadsheet.

2023 G.C.E. (O.L.) Examinations - Performance of School Candidates				
Province-wise (1st Attempt)				
Province	No. of students Sat for 5 or more subjects	No of Students Qualified	Qualified %	Qualified % as per all island
Western Province	60,474	62,056	77.11%	25.41%
Central Province	41,737	31,380	75.19%	12.85%
Southern Province	41,302	32,301	78.21%	13.23%
Northern Province	17,852	12,868	72.08%	5.27%
Eastern Province	26,780	20,717	77.36%	8.48%
North western Province	38,383	28,436	74.03%	11.64%
North central Province	23,193	16,604	71.59%	6.80%
Uva Province	22,217	16,465	74.11%	6.74%
Sabaragamuwa Province	80,599	23,421	76.54%	9.59%
All Island	322,539	268,428	75.72%	100.00%
Least Qualified Percentage				
Highest Student Count Sat				



(i)

- (a) Write the formula to calculate the “Percentage of students qualified for Advanced Level” in cell D6 for the Western Province.

Percentage of students qualified for Advanced Level = (Number of students qualified / Number of students sat for 5 or more subject) × 100

- (b) Write the formula to calculate the “Total number of students sat for 5 or more subjects” in cell C15 for all the provinces in the island.

Write it as: =Function(Cell1:Cell2)

- (c) The percentage contribution of each province to the number of students qualified for Advanced Level from the entire island is shown in column E.

Write the formula used to calculate the percentage in cell E6. Note that the percentages for the other provinces were calculated by copying this formula to the range E7:E14.

- (d) Write the formula to find the lowest percentage of students qualified for Advanced Level in cell B16.

- (e) Write the formula to find the highest number of students who appeared for the examination in cell B17.

- (f) What is the range of cells or ranges used to create the graph shown above?

- (ii) State whether the following statements are true or false regarding spreadsheets:

- (a) A value entered into a cell is automatically right-aligned by default.
(b) adjoining cells in a spreadsheet can be merged.
(c) The cell selected for entering data in a spreadsheet is called the active cell.
(d) The cell borders of a spreadsheet can be printed without being visible.

7. Below are some data tables from the database of the company “Anu Furniture”, which markets furniture to consumers. Answer the questions given based on them.

Customer

CustomerID	Cus_Name	AccountNo	Tel_no
2421	Athula Botheju	4451886	0782721383
2422	Theja Kumari	4478910	0701551271
2431	Sathish Perera	4512397	0781466762

Product

ProductID	Pro_Name	U_Price
101	Single bed	35,000.00
102	Study Table 1	24,000.00
103	Study Table 2	32,000.00
104	Sofa Set	125,000.00

Order

CustomerID	ProductID	OrderDate	OrderQty	OrderAmount
2421	101	2024-03-25	02	70,000.00
2422	104	2024-04-05	01	125,000.00
2431	102	2024-04-09	02	48,000.00

- (i) Name the appropriate fields for the primary key of the Customer table in this database.
- (ii) List two foreign keys in the database along with their corresponding tables.
- (iii) Which tables need to be updated to fulfill the following tasks?
 - (a) A customer, Mr. Athula Botheju, orders a sofa set on 2024-05-20.
 - (b) A new product item, Corner stand, is introduced for sale with a unit value of Rs. 15,000.
- (iv) List the new records as given format table name → (field1, field2) that need to be inserted into the relevant tables to implement the changes mentioned in parts (a) and (b) of part (iii) above.
- (v) Identify the product item and quantity ordered by the customer with customer number 2431 on 2024-04-09.
- (vi) What tables should be linked to write a query to find the product items ordered related to orders placed during the month of April?