

30.23 COMPUTER STUDIES (451)

30.23.1 Computer Studies Paper 1 (451/1)



MANYAM FRANCHISE
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SECTION A

1. Input
Process
Control
Storage
Output

Any 2@½ (2 marks)

2. (a) **Data communication**

It is a term that describes the transmitting and receiving of data and/or signals data over communication links. (1 mark)

- (b) **Characteristics of an effective data communication system**

- Accurate
- Secure
- Timely

(2 marks)

3. Intra net is a company's internal network to which outsiders cannot get access to while Internet allows outsiders to access company network if proper security measures are not implemented.

(2 marks)

4. Formulae are user designed expressions that create a relationship between cells and return a value in a chosen cell.

While a function is an inbuilt predefined (hidden sub-program) that is found in a spreadsheet program.

(2 marks)

5. :

- Ensures that only authorized users access the network through logging in and out.
- Restricts when and from where users can access the network.
- Dictates which rules/protocols computers may use to communicate.
- Supply application to users within a network.

(4 marks)

6. :

- Invoke the search and replace command button.
- Insert appropriate words in the find and replace fields on the dialog box.
- Create a space before and after each word in the two fields

(3 marks)

7. T M K
0 0 1
5 0 2
10 5 3

M=5(1 mark) T=10(1 mark)
(3 marks)

8. They cannot be:

- faked
- guessed
- hacked
- delegated.

Any 2 = (2 marks)

9. (a) **RAM**

Holds data that is urgently need by the processor

(b) **Hard disk**

Used to hold large volumes of data that is not urgently required by the processor – also for back up of OS and data. (2 marks)

10. **Telecommuting:**

- Working from a remote place using a computer connected to the internet.
- Screening patients requires direct interaction with the patients hence not the best. (2 marks)

11. :

- Easy of communication
- Easy of duplication
- Enforcing is still a problem e.g officers are not computer literate.
- Lack of capacity for people enforcing the law. (2 marks)

12. :

- Prevents people from straining.
- Table sizes allow all equipment to fit.
- Optimization/utilization of room space. (2 marks)

13. (a) **Main document:**

- Part of the document which appears in every mail document.

Purpose

- Hold fields where information from the table is to appear. (2 marks)

(b) **Data source:**

- It's a database/table

Purpose

- Hold records which are to be merged to the main document. (2 marks)

14. **Shipping control:**

- navigation.
- loading and offloading.
- docking
- records management.
- communication. (3 marks)

15. **System analyst roles**

- Make an appraisal of the information needed of the firm in some area defined by management and specify the information which is required to meet the current and expected needs of the firm.

Programmer roles:

- To advise the senior systems analyst on the feasibility and efficiency of the proposed program suit and when required to assist in it's design.
- To construct a new system based on the requirement as specified by the systems analyst.

Any role (1 mark)

Or

Network Engineer roles:

- Responsible for planning designing and implementation of appropriate network between the three plans as specified by the systems analyst.

Any role (1 mark)

16. (a) **Disadvantages of machine level language**

- It is time consuming to develop
- It's easy to make mistakes because only 0's and 1's are used.
- Program written for one computer model may not run on another computer model.

- (b)
 - Start/Stop.
 - Computing average.
 - Assigning the grades.
 - Statement in the decision box.
 - Printing.
 - Looping (initializing, testing). (10 marks)

(c) (i) $\left. \begin{array}{l} <DA 105 \\ SUB 40 \\ ADD 20 \end{array} \right\} 2^{\text{nd}} \text{ generation}$

(ii) $\left. \begin{array}{l} 10000110 1111101 \\ 01111000 0001100 \end{array} \right\} 1^{\text{st}} \text{ generation}$

(iii) For x = 1 to 10
 Print x
 Next x (3 marks) 3rd generation

17. (a) (i) Activities (system implementation)
- File conversion system change over.
 - Training, construction, installation.
- (ii) System construction stage.
- Coding
 - Module testing
- (b) System maintenance stage is necessary
- (i) Correct the errors that may have escaped during the design.
 - (ii) To meet the changes in technology.
 - (iii) Changes in government policy.
 - (iv) Changes in operating environment e.g. the system evolving (e.g when a newer version of software is released). (Any 3(1 mark each))

- (c) **Observation not viable method of gathering information:**
- Distance = when data is to be collected from a far place.
 - If the people to be observed must be aware that they are being observed.
 - When the situation is risky for the observer. (Any 2 (1 mark))

- (d) **Input design:**
- Data capture method.
 - Input interface, between user and the system e.g. form.
 - Volume of input.
 - Frequency of input. (2 marks)

- Output design**
- Form of output designed e.g. hard/soft copy.
 - Output layout.
 - Purpose of output. (2 marks)

- (e) **Other strategies other than system construction:**
- Constrained by time.
 - Constrained by cost
 - Constrained by human resource.
 - Legal requirements.

(2 marks)

18. (a) **Field property:**
- Specifies details related to fields and table entries expected e.g. field size, format, decimal places etc.

- (b) (i) (I) Patients No. - Data type - Text
Reasons – it combines both numeric and alphanumeric characters.
 - (II) Date - Date type - Date
Reason – Data type can be manipulated mathematically, e.g. number of months can be calculated between two dates.
 - (III) Amount paid – Data type - Currency/Numeric
Reason – it can be manipulated mathematically.
 - (IV) Remarks – Data type – Memo
Reasons – the content may be lengthy e.g. giving a paragraph.
- (8 marks)

- (ii) Appropriate primary key on the table
- Patient No.
- (iii) Purpose of primary key
Identify each of the records in the database
Useful when you want to create a relationship between more than one table.
Makes access to database records faster e.g. when sorting.
(2 marks)
- (iv) Create a query
Apply the criteria on the date field.
Give the criteria date registered >09/08/06

19. (a) (i) **Password**
- It's a string of characters entered by a user to verify his or her identity.
 - The system compares the code against a stored list of authorized users. If the user is legitimate then the system allows the user access.
- (2 marks)

- (ii) **User level access**
- It's a mechanism for limiting access to certain items of information or to certain control based on user identities and their membership in various predefined groups.

- (b) **Characteristics of a suitable password**
- Easy to remember
 - Should have appropriate length
 - Hard/difficult to guess

- (c)
- Slow or not booting.
 - Files not opening.
 - Functionality of some application failing.
 - Files or data getting lost.

Any 2 x 1 = (2 marks)

- (d) (i) **Naming the parts**
- A – Sender/terminal
 - B – Digital waveform
 - C – Modem
 - D – Analogue waveform.
- (ii) **Advantages of fibre optic over satellite**
- Cost.
 - Supports broadband communication.
 - Signal is directed and therefore secure.
 - It's minimal to raise interference e.g. noise.
- (2 marks)

20. (a) $9_{10} = 1001_2$ Im conversion
 001001 1m in six bits
 - $9_{10} = 110110$ 1m

(b) (i) ASCII, BCP, EBCDIC, Extended ASCII

Any 3 x 1 = (3 marks)

(ii) A: $1010010_2 = 82_{10}$ 1m
Decimal code = $82 - 14$ 1m
 $= 69^{\text{th}}$
 $= 1000101_2$ 1m

B: ASCII 1m
Reason: The coding scheme is utilized using seven bits. 1m

C: $54 = 11011_2$ 1m
 $29 = 11101_2$ 1m

COMP (29) = $\begin{array}{r} 00011101 \\ 11100010 \\ \hline \end{array}$ 1m
+1
ADD = $\begin{array}{r} 11100011 \\ 00110110 \\ 11100011 \\ \hline 100011001_2 \end{array}$ 1m

Overflow bit - ignored

$0011001_2 = 25_{10}$ 1m

30.23.2 Computer Studies Paper 2 (451/2)

MARKING SCHEME (DATABASE)

1.	(a)	Creating a database	1	
		Correct name	<u>1</u>	
			2 marks	
	(b)	Two tables	1	
		Each table ½ marks	1	
		• Primary key (1 table)	3	
		3 fields		
		• Fields (2 nd Table)	<u>4</u>	
			9 marks	
	(c)	Relationship		
		• Correct relationship	1	
		• Choosing correct table	1	
		• Enforcing the relationship	<u>1</u>	
			3 marks	
	(d)	Creating two forms		
		Each table 1 mark	2 marks	
		• Existence of fields		
		Table 1 – 3 fields each ½	1½	
		Table 2 – 3 fields each ½	1½	
		• Naming each form 1 marks	<u>2</u>	
			7 marks	
	(e)	Each tenant record (Form) ½ x 6 records	3	
		Each payment record (Form) ½ x 12 records	<u>6</u>	
			9 marks	
	(f)	Presence of report	1	
		Appearance correct (fields)		
		Name	} 1 each	
		Month		
		Amount		
		Sum January, February, March	1	
		Grand total	1	
		Report name (saving)	1	
		Title name	<u>1</u>	
			8 marks	
	(g)	(i)	Presence of correct query	1
			Presence of fields (name, Amount, Month)	
			In the query	1
			Correct criteria	1
			Saving query	<u>1</u>
				4 marks
		(ii)	Report	1
			Data source (query)	1
			Name of report (saving)	1
			Title of report	<u>1</u>
				4 marks

- (h) Printing 2 tables }
 2 reports } 4 marks

SPREADSHEET

2. (a) Entering the data
- Each column 8 x 1 each 8 marks
 - Entering labels (name, subject, Admission) 1
 - Saving workbook "Mock result" 1 mark
- 10 marks
- (b) Calculate
- Total marks (correct formula & application) 2
 - Average marks " " " 2
- 4 marks
- (c) Using function to obtain mean mark
- Use of correct function 1
 - Correct range 1
 - Application on other cells 1
- 3 marks
- (d) Count If function
- Applying the function 1
 - Correct range 1
- 2 marks
- (e) Formatting
- Borders (single line) 1
 - Subject heading (acquired 90°) 1
 - Merging cells (Subject) 1
 - Average marks (2 decimal) 1
- 4 marks
- (f) Maximum & minimum marks (each subject)
- Correct formula (maximum) 1
 Applying to other cells 1
- Correct formula (minimum) 1
 Applying to other cells 1
- 4 marks
- (g) If function
- Copying to sheet 2 1
 Inserting 6 columns (½ x 6) each 3
 Formula grade (1 mark each selection) 5
 Copying formula to other cells 1
 Inserting label (column) ½ x 6 3
- 13 marks

- | | | | |
|-----|--|--------|----------|
| (h) | Hiding cell | | 1 mark |
| (i) | Chart (Bar) | | |
| | - Selection range (x,y) axis | | 2 |
| | - Chart title | | 1 |
| | - Right chart(Bar) | | 1 |
| | - Labels x & y axis | | <u>2</u> |
| | | | 6 marks |
| (j) | Printing worksheet 1 }
Worksheet 2 }
Bar Chart } | 1 each | 3 marks |