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INDIAN SCHOOL MUSCAT
HALF YEARLY EXAMINATION 2023
**INFORMATION TECHNOLOGY (802)**

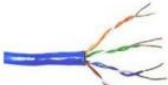CLASS: XI                                                                                          Max.Marks: 60
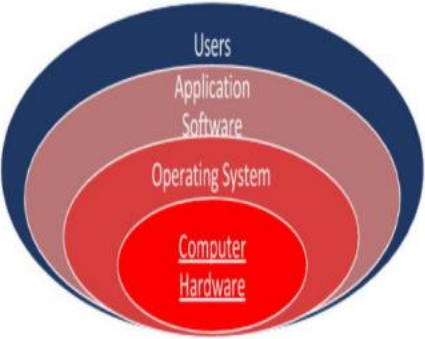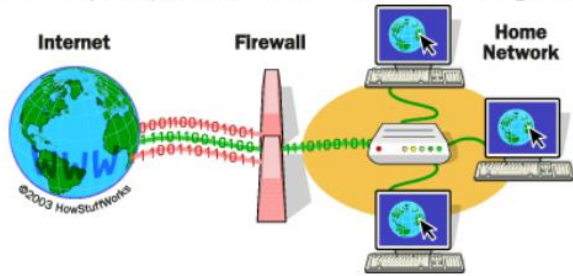
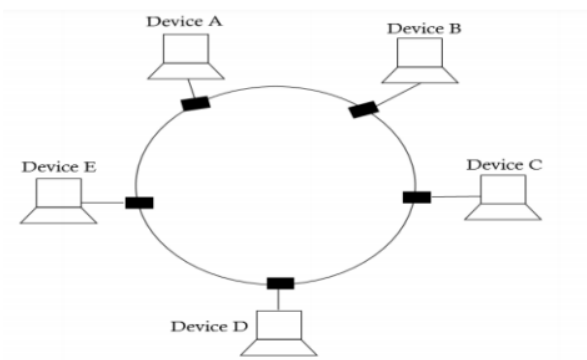| QN. NO | VALUE POINTS | MARKS SPLIT UP |
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| | MARKING SCHEME | |
| | **SECTION A: EMPLOYABILITY SKILLS** | |
| 1. | **Answer any 3 out of the given 4 questions (1 x 3= 3 marks)** | |
| i. | c. If you insert a footer in one page, it will appear on all pages. | 1 |
| ii. | Delete | 1 |
| iii. | Make the document attractive by adding different colours, text styles and text sizes, and by inserting pictures, bulleted lists, tables, shapes and charts. Spelling and grammar option use to correct grammar, spelling and language. | 1 |
| iv. | File | 1 |
| 2. | **Answer any 1 out of the given 2 questions (1 x 2= 2 marks)** | |
| v. | A header will be created at the top of each page. Ex: Title of the book. A footer can be created at the bottom of each page. Ex: Page number | 1 |
| vi. | Save allows you to update a previously saved file with new content, whereas Save As allows you to save a new file or an existing file to a new location with the same or different name. | 1 |
| | **SECTION B: SUBJECTIVE TYPE QUESTIONS** | |
| 3. | **Answer any 6 out of the given 7 questions (1 x 6 = 6 marks)** | |
| i. | Intelligence or Artificial Intelligence | 1 |
| ii. | A virus is a software code that may harm your system by overwriting or corrupting the system files. A computer virus may make several copies of it by inserting its code onto the system programs, files or boot sector of hard drives and thereby may corrupt them. A worm is a malware often received via network, and it automatically keeps on creating several copies of itself on the hard disk thereby flooding the hard disk. | 1 |

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| iii. | PAN, LAN, MAN, WAN | 1 |
| iv. | A relation is a table that stores data in the form of rows and columns. The tables in a database are generally related to each other to facilitate management of the database. | 1 |
| v. | DECIMAL | 1 |
| vi. | MESH TOPOLOGY | 1 |
| vii. | a. Hard disk | |
| 4. | **Answer any 6 out of the given 7 questions (1 x 6 = 6 marks)** | |
| i. | d. Modem | 1 |
| ii. | **Hardware** | 1 |
| iii. | NOT NULL constraint in MySQL makes sure that NULL values in the specified column are not accepted. | 1 |
| iv. | Cyber laws are the laws for systematic use of e-resources, for example, e-business, and serve as a measure against illegal cyber-crime. | 1 |
| v. | Eavesdropping is the act of secretly or stealthily listening to the private conversation or communications of others without their consent. Eavesdropping is done through telephone lines, cellular networks, email, and instant messaging. | 1 |
| vi. | SHOW TABLES; | 1 |
| 5. | **Answer any 5 out of the given 6 questions (1 x 5 = 5 marks)** | |
| i. | Power Supply Unit converts alternate current power supply received by homes or offices to the low voltage direct current required by the machine. | 1 |
| ii. | DISTINCT | 1 |
| iii. | DML | 1 |
| iv. | Transmission Control Protocol/ Internet Protocol | 1 |
| v. | Disk Cleanup removes unwanted temporary files from the computer. It increases disk space and speed. | 1 |
| vi. | Channel is the communication medium through which message is transmitted | 1 |
| | **Answer any 6 out of the given 7 questions (2 x 6 = 12 marks)** | |

| 6 | Compiler Compiler translates and executes program written in High Level Language to Machine Language at once in one go and vice-versa. • Interpreter Interpreter translates and executes program written in High Level Language to Machine Language line by line, unit by unit and viceversa | 2 |
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| 7 | The BETWEEN operator defines a range of values that the column values must fall in, to make the condition True. The range includes both lower value and the upper value. Syntax: SELECT FROM WHERE BETWEEN \<upper value\> AND \<lower value\>; <br><br> **Eg:** <br><br> Table 9.4 : Items <br><br> | Icode | Descp | Price | QOH | ROL | ROQ | <br> |---|---|---|---|---|---| <br> | I01 | Milk | 15.00 | 20 | 10 | 20 | <br> | I02 | Cake | 5.00 | 60 | 20 | 50 | <br> | I03 | Bread | 9.00 | 40 | 10 | 40 | <br> | I04 | Biscuit | 10.00 | 50 | 40 | 60 | <br> | I05 | Namkeen | 15.00 | 100 | 50 | 70 | <br> | I06 | Cream Roll | 7.00 | 10 | 20 | 30 | <br><br> **Query to list the items whose QOH falls between 30 to 50 (both inclusive)** <br> SELECT Icode, Descp, QOH FROM Items WHERE QOH BETWEEN 30 AND 50; <br><br> ``` +------------+------------+------------+ | Icode | Descp | QOH | +------------+------------+------------+ | I03 | Bread | 40 | | I04 | Biscuit | 50 | +------------+------------+------------+ ``` <br> Only the items having QOH between 30 to 50 have been listed | 2 |
| 8 | Any 4 Functions of OS <br> − Communication Manager <br> − Resource Management <br> − Process Management <br> − File Management <br> − Memory Management | 2 |
| 9 | Record - The horizontal subset of the Table is known as a Row/Tuple. Each row represents a record, which is a collection of data about a particular entity such as person, place or thing. <br><br> Field - The vertical subset of the Table is known as a Column/Attribute. The term field is also often used for column. Each column has a unique name and the content within it must be of the same type. <br><br> Example | 2 |

| 10 | ALTER TABLE command alters the structure of the table. It allows the user to<br>add/delete/modify columns or constraints of the table<br>Syntax:<br>ALTER TABLE <table_name> ADD/DROP <column_name> [datatype];<br>ALTER TABLE <table> MODIFY <column> <new_definition>;<br>Eg:<br>**To add a column Games to the table Student.**<br>ALTER TABLE Student ADD Games VARCHAR(20);<br>**To change the newly added Games column to hold integers(in place of character data)**<br>ALTER TABLE Student MODIFY games INTEGER;<br>**To delete a column of a table the ALTER TABLE statement is used with Drop clause.**<br>ALTER TABLE Student DROP Games; | 2 |
| 11 | A transmission medium refers to the channel of transmission through which data can be transmitted from one node to another in the form of signal. A signal encodes the data in a form suitable for transmission on the medium.<br><br>**Two categories of Transmission Medium:**<br>1. **Guided Medium**: It refers to physical conductors such as twisted pairs, coaxial cable, and fiber optics. In twisted pair and coaxial cable, the signal travels as voltage and current signal whereas in optical fibre, the signal is in the form of light.<br><br>Common network cable types<br>• Unshielded twisted pair (UTP)<br>• Shielded twisted pair (STP)<br>• Coaxial cable<br>• Fiber optic<br><br>2. **Unguided Medium**: It does not require a physical conductor and it uses electro-magnetic waves. Examples of unguided medium include microwave, radio wave and infrared. | 2 |
| 12 | There are various network devices, each of which plays a specific role in the network.<br>✓ Repeater A repeater is a network device which is used to restore (reshape and amplifies) the input signal to its original form so that it can travel a larger distance. It is also known as digital generator. It is placed between two cable segments.<br>✓ Hub A hub is a central connection networking device that connects single nodes to form a network. It transmits data in the form of binary bits to all the other nodes in the network. | 2 |
| | **Answer any 5 out of the given 6 questions (3 x 5 = 15 marks)** | |

| 13 | **Sound Troubleshooting**<br>    o  Check the cable connection.<br>    o  Check the volume level of the speakers. Click the Audio button in Task Bar to make sure the sound is turned on and that the volume is up.<br>    o  Check audio player controls - Many audios and video players have their own separate audio controls. Ensure that the sound is turned on and that the volume is set large enough to be heard. | 3 |
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| 14 | **Operating System**<br>It acts as an interface between the user and the computer and plays a major role in program execution.<br><br><br><br>Ex.Linux, Windows<br>**Real-Time Operating System**<br>They are intended for applications where data needs to be processed quickly, without any significant delays. For example, an anti -aircraft missile system must fire as soon as it receives a signal from the enemy aircraft. | 1+1 +1 |
| 15 | **Network security tools and services**<br>  ▪    Network layer security<br>      TCP/IP protocols may be secured with cryptographic methods and security protocol like Secure Sockets Layer (SSL)<br>  ▪    Firewalls<br>      A firewall is a network security system that prevents unauthorized access to a network. In other words, it monitors and controls incoming and outgoing network traffic based on predetermined security rules.<br><br> | 3 |

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| | ▪ **Antivirus**<br>Anti-virus is software that aims to protect your system against malicious and potentially unwanted programs. It scans the system to detect malicious programs, removes or disable the program based on the settings.<br>▪ **Password managers**<br>A password manager is a software application that helps a user to store and organize passwords. Password managers usually store passwords encrypted, requiring the user to create a master password which grants the user access to their entire password database from top to bottom | |
| 16 | Simplex mode: In Simplex mode, information can be transferred only in one direction. This mode is termed unidirectional.<br>Half-duplex mode: Half-duplex mode is a bidirectional communication between the two nodes in which only one node can transmit data at a time.<br>Full-duplex mode: Full duplex mode is a bidirectional communication between the two nodes in which both the nodes can send and receive data at the same time. Eg: NIC (Network Interface Card) on the systems for networking supports full-duplex mode. | 3 |
| 17 | Primary Key: A key that uniquely identifies each row of a relation is called Primary key. It cannot be null. Only one key in the table can be set to Primary key.<br>Candidate key: A key or a group of keys that uniquely identifies each record in a table.<br>Alternate key: Alternate key is the candidate key which is not selected as the Primary key. | 3 |
| 18 | UPDATE student SET m1=100;<br>SELECT bname from books where m1<78; | 1+1+1 |
| | **Answer any 3 out of the given 4 questions (4 x 3 = 12 marks)** | |
| 19 | a. Create database games;<br>b. Use games;<br>c. Create table gamer (GID INT(2) PRIMARY KEY, GNAME VARCHAR(20) UNIQUE , GENDER VARCHAR(10), DOB DATE); | 1 + 1+2 |
| 20 | a. Select price from furniture where type="Double bed";<br>b. Select * from furniture where Price >20000 and Price < 40000;<br>c. Update furniture set type="sofa-set" where Fid="F192";<br>d. Select type, weight from furniture; | 1+1+1+1 |
| 21 | Input unit accepts input and is formed by the Input devices attached to the computer.<br>*Eg Input devices:*<br>❖ **Keyboard**: A device that helps the user to feed data, digits, commands etc.,<br>❖ **Mouse**: A pointing device that helps the user to click and choose.<br>❖ **Microphone:** Microphone accepts sound in the form of analog signals, coverts it to digital signals so that the computer can understand.<br>❖ **Scanner**: A scanner is an input device that scans documents such as photographs and pages of text. It creates an electronic version of the scanned document. | 2 + 2 |

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| | **Output unit**<br>Output unit displays output and is formed by the output devices attached to the computer.<br>*Eg.* Output devices<br>**Monitor**: It displays the output to the user. The picture on a monitor is made up of thousands of tiny coloured dots called pixels.<br>**Printer**: The output is obtained as a hard copy, printed as characters/pictures on paper.<br>**Speaker**: It converts the digital signals to analog form, in a format audible to the user. | |
| 22 | The geometric arrangement (also called layout) of nodes in a network is called network topology.<br><br>**Ring topology**<br>In ring topology, all the devices are attached through a cable in the form of a ring. The message to be communicated is transmitted in one direction, thereby relaying the message to the intended recipient. Addition/deletion of devices, fault detection and isolation is easy.<br>Limitation:<br>Single point failure leads to disruption of the entire network.<br><br><br>Fig 2.13 Ring Topology | $1 + 1\frac{1}{2} + 1\frac{1}{2}$ |

## Bus topology

In bus topology, there is a long cable, called backbone cable (or simply backbone), that connects various nodes through a connector called tap. In Bus topology, a message sent by one is received by all devices connected to the backbone cable. This topology requires less cabling and is easy to install and extend the network laid using it. A terminator is a device that is used at the end of backbone cable to absorb signals to avoid signal reflection.

Limitation:

Backbone cable failure leads to disruption of the entire network.

Fault detection and isolation is difficult.



**Bus Topology**

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