



ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

RESOURCES FOR
“SSC-I COMPUTER”
ZUEB EXAMINATIONS 2021



PREFACE:

The ZUEB examination board acknowledges the serious problems encountered by the schools and colleges in smooth execution of the teaching and learning processes due to sudden and prolonged school closures during the covid-19 spread. The board also recognizes the health, psychological and financial issues encountered by students due to the spread of covid-19.

Considering all these problems and issues the ZUEB Board has developed these resources based on the condensed syllabus 2021 to facilitate students in learning the content through quality resource materials.

The schools and students could download these materials from www.zueb.pk to prepare their students for the high quality and standardized ZUEB examinations 2021.

The materials consist of examination syllabus with specific students learning outcomes per topic, Multiple Choice Questions (MCQs) to assess different thinking levels, Constructed Response Questions (CRQs) with possible answers, Extended Response Questions (ERQs) with possible answers and learning materials.

ACADEMIC UNIT ZUEB:

2. Constructed Response Questions (CRQs)

HOW TO ATTEMPT CRQs:

- Write the answer to each Constructed Response Question/ERQs in the space given below it.
- Use black pen/pencil to write the responses. Do not use glue or pin on the paper.

SECTION B (SHORT ANSWER QUESTIONS)

1. Differentiate between data and information?


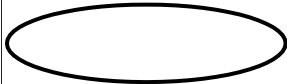
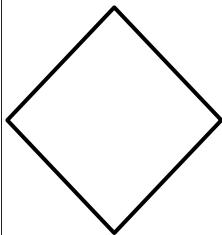
This image shows a single sheet of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

S.NO	CRQ	ANSWER	CL	DL
1.	Define Computer	COMPUTER is an <u>Electronic Data Processing Machine or Device</u> that performs processes, calculations and operations based on instructions provided by a program. Today, computers are used in fields of Business, Industry, Education, Banking, Transportation, Research, Explorations, Media, Entertainment, etc.	K/A	M
2.	Why Charles Babbage is Called Father of Computer?	<p><u>BABBAGE'S DIFFERENCE AND ANALYTICAL ENGINES (1822 & 1837 A.D.)</u></p> <p>Charles Babbage was an English mathematician and mechanical engineer. <u>CHARLES BABBAGE IS KNOWN AS FATHER OF COMPUTER</u> because he developed the first complete computing machine</p> <p>(i) <u>DIFFERENCE ENGINE 1822 to 1823</u></p> <p>Difference Engine was the first invention. It was an automatic mechanical calculator. It was a large machine, made of metal and was powered</p>	U	M

		<p>by steam. The Difference Engine had storage (mechanical memory) that could hold the data temporarily for processing and to store results. It was used to allow a user to enter calculations and get printed results. The Difference Engine worked on difference of equations.</p> <p>(ii) <u>ANALYTICAL ENGINE 1833 to 37</u></p> <p>Charles Babbage designed another machine called Analytical Engine in 1833 to 1837. The proposed design included an ALU with basic programmatic flow control. It was programmed using punched cards and contained integrated memory. Historians consider it to be the first design concept of a general-purpose computer because of its comprehensive & complete design.</p>		
3.	Discuss ELECTRO-MECHANICAL ERA with the features of Tabulating Machine?	<p><u>ELECTRO-MECHANICAL ERA (MIDDLE AGE)</u></p> <p>This Period or Age starts from the mid of 19th century. In this era scientists became able to develop faster and more accurate computing machines as they were powered by steam and electricity. One of such machines was <u>TABULATING MACHINE.</u></p> <p><u>HERMAN HOLLERITH'S TABULATING MACHINE (1890 A.D.)</u></p> <p>Tabulating Machine was invented by an American inventor Herman Hollerith in 1890. Hollerith's first tabulator was used for the U.S. 1890 Census. Because of Hollerith's tabulating machine census data took only six months to compile, which was very fast as compared to previous U.S. census in 1880 which took almost 7 years to be completed. Punch Card & Hollerith Tabulating Machine became very famous and used in many offices of U.S. Government</p>	K/A	E
4.	Define Operating System?	<p>An <u>OPERATING SYSTEM</u> is software which performs all the basic tasks like booting the computer, File management, Memory management, Process management, and controlling peripheral devices such as hard disk, printer, etc. It manages computer resources efficiently. Most common operating systems are: DOS, Windows, Linux, Android, and Mac OS and IOS</p>	K/A	E
5.	Define CLI and GUI?	<p><u>(a) CLI (Command Line Interface)</u></p> <p><u>A Command Line Interface (CLI) is a screen or text-based representation in which the user</u></p>	U	M

		<p>types the commands on place called <u>prompt to operate the computer</u>. Command contains string of characters. CLI is difficult to use because the user has to remember the commands and their syntaxes but it is fast in use because text mode takes less resources. It was primarily provided to users by computer terminals on UNIX, and personal computers including MS-DOS and Apple DOS.</p> <p>(b) GUI Graphical User Interface</p> <p><u>A GUI provides a user-friendly environment where user can interact with computers through graphical objects such as menus, icons, buttons and other graphical objects</u>. It is easy to use as users are supposed to just click on a picture to run commands without memorizing them. <u>GUI is slower than CLI</u> as graphical mode takes more memory and resources. Windows and IOS are the example of GUI</p>		
6.	Define Single-User and Multi-User Operating System?	<p><u>Single User and Multi-user Operating System</u></p> <p>In a <u>SINGLE USER OPERATING SYSTEM</u>, a single user can access the computer system at a time. These types of operating systems are commonly used. DOS for PCs and Windows 98 for PCs are example of single user operating system.</p> <p>A <u>MULTI-USER OPERATING SYSTEM</u> allows multiple users to access the computer at same time. The operating system manages the memory and resources among the various users according to the requirement. Linux and UNIX are the most common examples of the multi-user operating system.</p>	K/A	M
7.	Define Data Communication and Data Transmission?	<p><u>DATA COMMUNICATION:</u></p> <p>Data Communication is the process of transferring data electrically from one place to another. It is the process of exchange of data and information between human and electronic or computing device.</p> <p><u>DATA TRANSMISSION:</u></p> <p>The data transmission means emission of data in any direction via wireless or wired medium. Transmission may occur between source and destination</p>	K/A	E

8.	Differentiate between Analog and Digital Signal?	ANALOG SIGNAL	DIGITAL SIGNAL	K/A	E
		1 Analog signal is a continuous wave that changes by time period.	1 A digital signal is a discrete wave that carries information in binary form.		
		2 Analog signal has no fixed range.	2 Digital signal has a finite number i.e. 0 and 1.		
		3 An analog signal can easily be disturbed by other signals or waves.	3 A digital signal is less prone to other signals disturbance.		
		4 The human voice is example of an analog signal.	4 Signals used by computer are the digital signal.		
		5 An analog signal is represented by a sine wave.	5 A digital signal is represented by square waves.		
		6 Analog signals are long term waves need to be boosting.	6 Digital signals are short term signals remain within digital devices / electronic.		
9.	What are the components of ER diagram?	<u>COMPONENTS OF ER DIAGRAM</u> ER Design is made up of different components like Attributes, Relationships, etc. There are defined symbols and shapes to represent each one of them. Some of the shapes used to define these components are:		K/A	E

		 <p>A rectangle is used to define an entity. This can be any real-world object like Student, Teacher, Class, etc.</p>		
		 <p>An ellipse defines an attribute of an entity. One entity may contain multiple attributes and are defined by multiple ellipses.</p>		
		 <p>Relationships are symbolically represented by diamond shape. It simply states the type of relationship between two entities.</p>		
10.	<p>Define any one of them? Short</p> <p>a) Primary Key</p> <p>b) Foreign Key</p>	<p><u>PRIMARY KEY</u></p> <p>A primary key is a unique key, used to uniquely identify a record in an entity.</p> <ul style="list-style-type: none"> * The attribute (field) must contain a unique value to identify a record. * The value of the attribute where Primary Key is applied, cannot be null. <p><u>FOREIGN KEY</u></p> <p>In a Database, A foreign key is used to define the connection or relation between two entities. The foreign key of one entity is arrange to be connected to the primary key of another entity. When a foreign key is applied on an attribute, it applies that the value for that attribute should match any record in the related entity having a primary key</p>	U	M

11.	<p>Define Data Types? Discuss any 3 of them?</p>	<p><u>DATA TYPES</u> All fields in a table must have some data type. Data type is a data storage format that can contain a specific type or range of values. The data type of a field is a property that tells what kind of data that field can hold. Here are some basic data types.</p> <table><tr><th>DATA TYPE</th><th>DESCRIPTION</th><th>EXAMPLES</th></tr><tr><td>Integer</td><td>Holds only whole numbers.</td><td>945, -15, 44586</td></tr><tr><td>Floating Point</td><td>Holds numbers with decimal points.</td><td>9.6, 7.14, 504.9</td></tr><tr><td>Character</td><td>Stores only one character.</td><td>A, E, c, f</td></tr></table>	DATA TYPE	DESCRIPTION	EXAMPLES	Integer	Holds only whole numbers.	945, -15, 44586	Floating Point	Holds numbers with decimal points.	9.6, 7.14, 504.9	Character	Stores only one character.	A, E, c, f	U	M
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12.	<p>What can software engineer do?</p>	<p><u>SOFTWARE ENGINEER</u> A Software Engineer is a person who uses different programming languages to develop software products like games, Learning Management System (LMS), business applications, educational and entertainment software</p>	K/A	M												
13.	<p>Define? Short a) Register b) Cache memory</p>	<p><u>REGISTERS</u> It is a temporary storage area that holds the data that is being processed. It is also known as programming model which may be of 8 bits, 16 bits, 32 bits or 64 bits.</p> <p><u>CACHE MEMORY</u> Cache is an intermediate storage area, which is available inside microprocessor. The immediate processed information is stored in cache. The cache inside the microprocessor is called internal cache and outside is called external cache.</p>	K/A	M												
14.	<p>Define Hardcopy output Device? Discuss any two hardcopy output devices briefly?</p>	<p><u>HARD COPY OUTPUT DEVICES</u> It is output on paper. It is nonvolatile output that is relatively stable and permanent form. Hard Copy Output Devices are:</p>	K/A	E												

		<p>a) <u>Printers</u></p> <p>They usually give output on paper and can print both text and graphics. There are two types of printers:</p> <p style="padding-left: 40px;">Impact Printers and Non-Impact Printers</p> <p>b) <u>Plotters</u></p> <p>Like printer it gives images on paper but typically used to print large format images such as maps, construction drawing, advertising hoardings etc</p>		
15.	Define Assembler, Compiler & interpreter?	<p><u>ASSEMBLER:</u></p> <p>Assembler translates the program written in assembly language into machine language instructions for execution.</p> <p><u>COMPILER:</u></p> <p>Compiler translates the entire high-level language program at once into machine language before it is executed.</p> <p><u>INTERPRETER:</u></p> <p>It translates the high-level language program line by line into machine language.</p>	K/A	E
16.	Define the term Attenuation?	<p><u>ATTENUATION</u></p> <p>The term, Attenuation means loss of energy. A signal loses its energy due to the resistance of medium while it is transmitted. Its strength decreases with increase in distance. Amplifiers are used to overcome attenuation and make signal stronger again. It is measured in decibels</p>	K/A	E
17.	Discuss OSI Model Briefly?	<p><u>OSI MODEL</u></p> <p>OSI stands for Open Systems Interconnection. OSI model is a conceptual model developed by ISO. It characterizes and standardizes the communication functions of a telecommunication and computing network. Its goal is the interoperability of different communication systems with standard communication protocols. This model divides a communication system into seven abstraction layers</p>	U	E

18.	What do you know about IPV4 address?	<p><u>IPV4 ADDRESS</u></p> <p>In Computer Networking, An IP address is a unique number or address used to identify a device on a network. The device could be a computer, printer, smart phone, tablet, etc. Every device connected to the internet must have an IP address to communicate with other devices. IP address acts as a telephone number or a car registration number. It shows ownership and location. IP address allows a device to communicate and be located by other devices on the internet. IPV4 stands for Internet Protocol version 4.</p> <p>An IPV4 address is made up of 32 binary bits, which is divided into two parts, network and host</p>	K/A	M
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