ROLL NUMBER

Answer Sheet No._____

Sign. of Candidate _____

Sign. of Invigilator _____

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. **Do not use lead pencil.**

COMPUTER SCIENCE
HSSC–I
SECTION – A (Marks 15)
Time allowed: 20 Minutes

Fill the relevant bubble against each question:

#	Question				
1.	Which of the following is an example of **embedded** computing device?	○ Keyboard	○ Digital Washing Machine	○ Mouse	○ Trackball
2.	Which of the following is used to process complex calculations and designing of complicated machines?	○ Mini computer	○ Micro computer	○ Personal computer	○ Super computer
3.	Which of the following types of optical disks can store more than 100 GB of data?	○ Blu-ray disk	○ Digital video disk	○ Compact disk	○ Floppy disk
4.	A type of memory that needs frequent power refreshing to retain its charge is called:	○ Programmable ROM	○ Magneto resistive RAM	○ Dynamic RAM	○ Static RAM
5.	The part of computer system that can hold data temporarily during processing is called:	○ Register	○ ROM	○ Optical disk	○ Hard disk
6.	Which of the following registers holds program instruction that are fetched from the memory for execution?	○ Memory Address Register	○ Memory Buffer Register	○ Program Counter Register	○ Instruction Register
7.	The expansion card which is required to run multimedia application on a computer is:	○ Gigabit card	○ Network interface card	○ Video graphic card	○ Modem card
8.	An interface or connection point through which peripheral devices connect to the computer is called:	○ Expansion slots	○ Port	○ Modem	○ System Bus
9.	TCP and UDP protocols are used at the following layer:	○ Session layer	○ Application layer	○ Network layer	○ Transport layer
10.	To setup a computer lab of 25 computers which class of IP address is suitable?	○ Class A	○ Class B	○ Class C	○ Class D
11.	Which of the following satellite systems is located above Low Earth Orbit and Below Geostationary Earth Orbit?	○ Geostationary Earth Orbit	○ High Earth Orbit	○ Medium Earth Orbit	○ Low Earth Orbit
12.	A Radio Frequency (RF) communication system consists of two components known as:	○ Transmitter and receiver	○ Transmitter and medium	○ Transmitter and transceiver	○ Receiver and medium
13.	Which of the following database languages is uses to insert, update and delete data in database?	○ DDL	○ DML	○ DCL	○ DXL
14.	The maximum number of an instance of one entity associated with each instance of related entity is called:	○ Unary relationship	○ Modality	○ Cardinality	○ Relational schema
15.	Which type of query is used to extract data from tables based on specified criteria?	○ Action query	○ Select query	○ Update query	○ Insert query

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COMPUTER SCIENCE HSSC–I

Time allowed: 2:40 Hours   **Total Marks Sections B and C: 60**

NOTE: The Questions of sections B and C are to be answered on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.

SECTION – B (Marks 36)

Q. 2   **Answer any TWELVE parts. All parts carry equal marks.**   (12 x 3 = 36)

(i)   Briefly explain any two types of system software with examples.

(ii)   Write down any two differences between hardware and software with examples.

(iii)   What is printer? Briefly explain Laser Printer.

(iv)   Write down two advantages and one disadvantage of flash memory.

(v)   Briefly explain the Sequential and Direct Access Memory.

(vi)   Identify the role of Database Administrator (DBA).

(vii)   Briefly describe CISC and RISC CPU architectures with one example each.

(viii)   Write down the purpose of following ports:
         a) Fire wire port   b) Serial Port   c) USB Port

(ix)   Write down any two differences between Synchronous and Asynchronous Transmission with the help of diagram.

(x)   If a college wants to setup a computer lab, which topology is best and why? Support your answer with two reasons.

(xi)   Write down the protocol and its purpose used on following layers of OSI Model.

Sr. No.	Layers of OSI Model	Protocol Used	Function/Purpose of Protocol
i	Data Link Layer		
ii	Network Layer		
iii	Session Layer		

(xii)   Write down one advantage and two disadvantages of wireless communication.

(xiii)   What is Infrared (IR)? Write its importance in wireless communication.

(xiv)   Observe the E-R diagram and answer the following questions:

COUNTRY ──── ⟨ has ⟩ ──── CAPITAL

         a) Identify the cardinalities   b) Identify the modality   c) Identify the degree of relationship

(xv)   Transform the following E-R diagram to the Relational Schema.

COLLEGE ──── ⟨ has ⟩ ──── PRINCIPAL

         a) Transform Entities   b) Transform Relationship

(xvi)   Briefly describe the following types of Form Layouts:
         a) Tabular b) Columnar

SECTION – C (Marks 24)

Note: **Attempt any THREE questions. All questions carry equal marks.**   (3 x 8 = 24)

Q. 3   Describe the following Motherboard components: (2+2+2+2)
    i)   BIOS   ii)   Ports
    iii)   PCI Expansion Slot   iv)   Cooling system

Q. 4   a)   Write down any three differences between static and dynamic RAM.   (2+2)
    b)   Compare the TCP suite with OSI model.   (04)

Q. 5   a)   What is the difference between data bus and address bus?   (2+2)
    b)   Describe instruction cycle with the help of diagram.   (3+1)

Q. 6   a)   A company has a number of employees. Each employee may be assigned to one or more projects. A project must have at least one employee assigned and may have several employees assigned.
        i)   Draw an ER Diagram   ii)   Identify cardinalities   iii)   Identify modalities   (2+1+1)
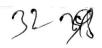   b)   Elaborate primary and Alternate key with the help of pictorial example.   (2+2)

ROLL NUMBER

Answer Sheet No. _____

Sign. of Candidate _____

Sign. of Invigilator _____

Section – A is compulsory. All parts of this section are to be answered on this page and handed over to the Centre Superintendent. Deleting/overwriting is not allowed. **Do not use lead pencil.**

COMPUTER SCIENCE
HSSC–I
SECTION – A (Marks 15)
Time allowed: 20 Minutes

حصہ اول لازمی ہے۔ اس کے جوابات اسی صفحہ پر دے کر ناظم مرکز کے حوالے کریں۔ کاٹ کر دوبارہ لکھنے کی اجازت نہیں ہے۔ لیڈ پنسل کا استعمال ممنوع ہے۔

ہر سوال کے سامنے دیے گئے درست دائرہ کو پر کریں۔

Fill the relevant bubble against each question:

#	Question	A	B	C	D
1.	Which part of computer system is responsible to perform arithmetic and logic operations?	Keyboard	Mouse	Central Processing Unit	Monitor
2.	The **intermediate form** between hardware and software is:	Shareware	Firmware	Freeware	Trial-ware
3.	One (1) terabytes is equal to:	1024^1 bytes	1024^2 bytes	1024^6 bytes	1024 bytes
4.	Which of the following topologies is the **most** suitable to make network of 5 computers?	Tree topology	Bus topology	Ring topology	Mesh topology
5.	The data transfer instruction MOV A, B will:	Load values of register A to register B	Move values of register B to register A	Move values of register A to register B	Move values of A & B to Memory Buffer Register
6.	**STOP** and **Halt** are examples of:	Zero address instruction format	One address instruction format	Two address instruction format	Three address instruction format
7.	Which of the following components of system unit is responsible to convert Alternating Current to Direct Current?	Central Processing Unit	Hard disk	Power supply	Motherboard
8.	The **fastest** serial transmission port is:	Parallel port	LPT 1	USB port	Firewire port
9.	Physical layer of OSI Model uses which of the following protocol?	X.25 & Ethernet	Point to point protocol	Net BIOS	TCP / IP
10.	In packet switching network, each packet contains:	Protocol, sender address, sequence number	Sender address, destination address, sequence number	Protocol, sender address, destination address	Protocol, sender address
11.	It is an example of line of sight communication:	WiMAX	WiFi	Infrared	Bluetooth
12.	Wireless application protocol (WAP) is used to:	Provide internet access to wireless devices	Modify signal frequency	Convert messages from text to electronic signal	Increase signal strength
13.	Creating users in RDBMS is the task of:	DDL	DML	DCL	DXL
14.	STUDENT — helps — is an example of:	Unary relationship	Binary relationship	Ternary relationship	Modality
15.	Which of the following data types can store upto 255 characters?	Currency	Date and time	Memo	Text

COMPUTER SCIENCE HSSC–I

Time allowed: 2:40 Hours   **Total Marks Sections B and C: 60**
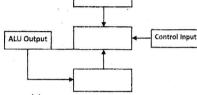
NOTE: The Questions of sections B and C are to be answered on the separately provided answer book. Use supplementary answer sheet i.e. Sheet–B if required. Write your answers neatly and legibly.
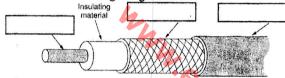
SECTION – B (Marks 36)

Q. 2   Answer any TWELVE parts. All parts carry equal marks.   (12 x 3 = 36)

(i)   Differentiate between Shareware and Freeware.

(ii)   Briefly explain the following types of computers:
(a) Mini computer (b) Micro computer

(iii)   Write any three differences between volatile and non-volatile memory.

(iv)   What is RAM? Write two differences between static and dynamic RAM.

(v)   Label the following diagram which depicts the working of Arithmetic and Logic Unit.

(vi)   Name four special purpose registers and explain working of any one of these.

(vii)   Briefly explain any two types of system Buses.

(viii) Write down the importance of cooling system in computer system.

(ix)   Label the following diagram of Coaxial cable.

(x)   Write down the uses of the following database objects provided by MS-Access:
a) Table   b) Query   c) Report

(xi)   Describe the following types of ROM:
a) PROM   b) EPROM

(xii)   Write down any three differences between WiFi and WiMAX.

(xiii) What is GPS? Write its importance in wireless communication.

(xiv)   A college has many departments and one department must belong to one college. Observe the situation carefully and draw the following:
a) E-R diagram   b) Identify the cardinalities

(xv)   Transform the following E-R diagram to the Relational Schema
a) Transform Entities.   b) Transform Relationship

(xvi)   What is 'query'? Write its purpose with one example.

SECTION – C (Marks 24)

Note: Attempt any THREE questions. All questions carry equal marks.   (3 x 8 = 24)

Q. 3   Describe the following Motherboard components.   (2x4)
(a)   BIOS   (b)   Memory Slot
(c)   Disk controller   (d)   Expansion slot

Q. 4   What is OSI Model? Write down the protocols and devices used on each layer: (1+7)

Sr. No.	Layer	Protocol	Devices
i			
ii			
iii			
iv			
v			
vi			
vii			

Q. 5   Describe the following output devices.   (2x4)
a)   LCD monitor   b)   Dot Matrix Printer
c)   Inkjet Printer   d)   Plotter

Q. 6   A doctor sees many patients and a patient may have many doctors. Many doctors may consult on a test and recommend it. A doctor can recommend many tests to a patient. Patients have a token number, name and age. Doctor has name, qualification, specialization and contact no. likewise test has name, date, time and result of test. Patient, doctor and test have unique identifiers.   (3+1+4)

Observer the above scenario and answer the following:
a)   List the entities   b)   List attributes for each entity
c)   Draw an E-R diagram and assign cardinalities