Version No.			
3	1	2	1

ROLL NUMBER

COMPUTER SCIENCE
HSSC–I

SECTION – A (Marks 15)
Time allowed: 20 Minutes

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.*

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

Answer Sheet No. _____

Invigilator Sign. _____

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

Fill the relevant bubble against each question according to curriculum:

Candidate Sign. _____

	Question	A	B	C	D	A	B	C	D
1.	Which of the following is **NOT** a hand-held device?	PDA	Tablet	Cell Phone	Router	○	○	○	○
2.	The track on a disk is divided into sections called:	Clusters	Sectors	Fields	Blocks	○	○	○	○
3.	Which of the following is **correctly** ranked from **smallest to largest**?	MB, TB, KB, GB	GB, KB, MB, TB	KB, MB, GB, TB	KB, MB, TB, GB	○	○	○	○
4.	Which of the following is the example of two address instruction format?	STOP	JMP	HALT	MOV	○	○	○	○
5.	What unit (or prefix) in memory is used to represent 2^{30} bytes?	KB	TB	GB	MB	○	○	○	○
6.	Which type of expansion slot provides the highest video performance now a days?	PCI	SCSI	PCI Express	AGP	○	○	○	○
7.	**DIMM** stands for:	Dynamic inline memory module	Dual inline memory module	Data inline memory module	Dull inline memory Module	○	○	○	○
8.	Which of the following OSI Layers uses X.25 protocol?	Application	Presentation	Network	Physical	○	○	○	○
9.	How many bits are used to present number of networks in a class C IP address?	10 bits	16 bits	24 bits	26 bits	○	○	○	○
10.	Which network device is used to connect two different types of networks?	Hub	Gateway	Repeater	LAN card	○	○	○	○
11.	Which of the following wireless technologies is **limited to short range**?	Bluetooth	Satellite	Cellular	GPS	○	○	○	○
12.	In RDBMS, a table is also known as:	Tuple	Relationship	Attribute	Relation	○	○	○	○
13.	A person's name, birthday and social security number are example of:	Entities	Attributes	Relationships	Keys	○	○	○	○
14.	Which form of dependency is removed in 2nd normal form (2NF)?	Functional	Transitive	Associative	Partial	○	○	○	○
15.	Which data type is default data type in MS ACCESS 2007?	Auto Number	Number	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. 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 IDE and SATA interface with reference to cost, speed and structure.

(ii)   Write down the functions of following components of Hard Disk.

Component Name	Function
Read/Write Head	
Spindle	
Platters	

(iii)   Why is SRAM more efficient? Which type of memory is developed using SRAM Technology?

(iv)   Write the functions of Handheld, Flatbed and Barcode scanners.

(v)   Complete the table using different examples of software given below.

Interpreter, Unix, Graphics Software, File compressor, Disk cleaner, Google Chrome.

Utility programs	Operating system	Language processor	Productivity software

(vi)   Give two examples each for following instruction types:

Instruction type	Instruction Name	Instruction objective
Program control Instructions		
Data transfer Instructions		

(vii)   Why is any computer – system bus regarded as either 'bidirectional' or 'uni-directional'? Also give one example of each.

(viii)   Which guided media is more efficient and secure? Give two reasons to support your answer.

(ix)   Differentiate between Append query and Update query.

(x)   State any three applications of using Infrared technology from daily life.

(xi)   State some important tasks performed by Data Control Language.

(xii)   What is DRAM? Why does DRAM use more power?

(xiii)   Differentiate between Text field data type and 'Memo field data type'.

(xiv)   State the uses of Wireless Markup Language and Wireless Application Protocol.

(xv)   Illustrate partial Dependency with the help of an example.

(xvi)   Complete the following table considering IP addressing and Subnet Mask.

IP Address in Binary	Subnet Mask	Class	IP Address
?	?	B	172.16.52.63
11000000.10101000.01111010.10000101	?	?	?
?	255.255.255.0	C	192.168.122.0

SECTION – C (Marks 24)

Note: Attempt any TWO questions. All questions carry equal marks.   (2 x 12 = 24)

Q. 3   (a)   What are ports? Explain different types of ports given on the motherboard.

(b)   Explain Network Topology. Discuss different types of Topologies with features and limitations.

Q. 4   (a)   Discuss different types of Internet applications. (Any three types)

(b)   What is an Instruction? Describe the types of CPU instructions.

Q. 5   (a)   Draw an ER Diagram for the following situations.

Staff (Staff ID, Name, Designation)

BOOK (ISBN, Title, Category, Price, Publisher, Serial No, Author)

READ (Reader ID, Roll No, Name, Class)

Any staff member can issue many books and any member can issue a book multiple time. A book can be issued to only one reader at a time. Identify **Entities, Cardinalities and Relationship** of the situation.

(b)   Explain any three Keys available in Data base. Give example(s) as well.

— 1HA-I 2312 —

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

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.

Version No. 7 1 2 4

ROLL NUMBER

Answer Sheet No. _____

Invigilator Sign. _____

Candidate Sign. _____

Fill the relevant bubble against each question according to curriculum:

	Question	A	B	C	D	A	B	C	D
1.	What is **maximum** length of text type field in MS ACCESS 2007?	350	155	255	50	○	○	○	○
2.	Which of the following key is pointed by foreign key in a relation to establish a one-to-many relationship?	Secondary	Primary	Alternate	Candidate	○	○	○	○
3.	Which one can be used to connect two **dissimilar** networks?	Bridge	Router	Switch	Ethernet Card	○	○	○	○
4.	Which type of software is free for inspection, modification and distribution?	Malware	Freeware	Open source	Groupware	○	○	○	○
5.	Which of the following is an impact printer?	Laser	Inkjet	Plotter	Dot matrix	○	○	○	○
6.	Which of the following is **NOT** a social media network application?	Win Zip	Instagram	Twitter	Facebook	○	○	○	○
7.	1 GB =	1024 KB	1024 TB	1024 Bytes	1024 MB	○	○	○	○
8.	USB flash drive is a type of _____ memory:	Optical	Electronic	Primary	Magnetic	○	○	○	○
9.	Which of the following provides interface to local network?	Modem	BIOS	Parallel Port	NIC	○	○	○	○
10.	Which of the following is an example of one-to-one relationship?	Person-Automobile	Mother-Daughter	Student-Reg Number	Person-Phone Number	○	○	○	○
11.	Which of the following is **NOT** a data transfer instruction?	LD	XCHG	MUL	MOV	○	○	○	○
12.	Which layer of the OSI model decides physical path to reach the destination?	Transport	Network	Application	Data Link	○	○	○	○
13.	Which type of wireless communication is **NOT** limited to short distance?	Wi-Fi	Bluetooth	Infra-Red	Cellular	○	○	○	○
14.	Which of the following is a fix station in cellular wireless network that provides local coverage for mobile communication?	Satellite	Mobile Terminal	GPS	Base station	○	○	○	○
15.	Which standard provides the best performance for hard drives?	SATA	EIDE	FDD	IDE	○	○	○	○

—— 2HA-I 2312 HA ——

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. 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)   Write down any two functions each for program counter register and instruction register.

(ii)   Compare Intel P4 with AMD-Athlon processors with reference to clock speed and cache.

(iii)   Write down any THREE features of BLUE-RAY disks.

(iv)   Write down any THREE differences between volatile memory and Non-volatile memory.

(v)   Write down any THREE professional applications each of Mainframe and Super computers.

(vi)   Write down the key features of display screen which enhances the quality of display.

(vii)   Differentiate between Wi-Fi and Bluetooth technology, by comparing any THREE features.

(viii)   Compete the following table:

Category	Distance	Purpose/Function
Geostationary Earth orbit		
Medium Earth orbit		
Low Earth Orbit		

(ix)   Compare synchronous with Asynchronous communications with reference to efficiency, cost and transmission structure.

(x)   Complete the following table:

Layer Name	Protocols	Device Used	Term used for DATA
Network			
Physical			

(xi)   Compare DDR with SDRAM with reference to speed, structure and cost.

(xii)   What is BIOS? Give any TWO important functions of BIOS.

(xiii)   Which topology is more popular? Support your answer with four reasons.

(xiv)   Draw ER diagrams for each of the following:

    a.   Student and course (Student registers for courses)

    b.   Country and Capital city (Each Country has a Capital)

    c.   Department and Manger (Department managed by manager)

(xv)   Complete the following table:

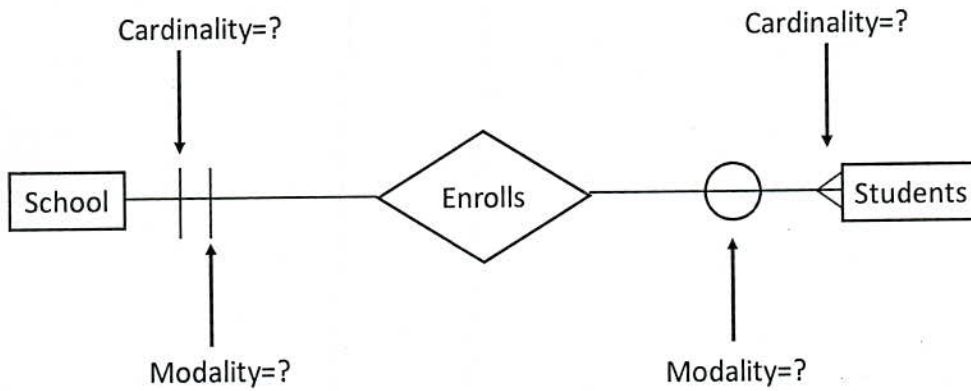| Data Type	Use	Size
TEXT		
MEMO		
AUTOMUMBER		

(xvi)   Differentiate Select query with *'Group by'* and *'Order by'* clauses with one example.

Note: Attempt any TWO questions. All questions carry equal marks.   (2 x 12 = 24)

Q. 3 **(a)** What are 'Cardinality' and 'Modality'? Explain the following diagram, with cardinality and modality.

Cardinality=?   Cardinality=?

School — Enrolls — Students

Modality=?   Modality=?

(b) Explain different categories of Printers. Also write down in detail about any THREE types of Printers.

Q. 4 **(a)** Read the values given within the box and answer the questions given below:

01. OFF/ON	02. 230 Bytes	03. L3 cache	04. Ultraviolet light
05. Blu-ray Disk	06. Spindle	07. Bit	08. D-RAM
09. Register	10. Optical Disk	11. Tracks	12. Main circuit board
13. EPROM	14. S-RAM	15. Hard Disk	16. GB

i.   Mention any two box numbers associated with Box number 15 (Hard disk.)

ii.   Mention the box number that is a feature of Optical Disk given in box number 10.

iii. Which box number is directly associated with box number 3?

iv.   Which box numbers contain types of RAM?

v.   Which box numbers have the Non-volatile memory devices?

vi.   List the box numbers having secondary storage devices.

vii. Mention the box number which holds the fastest memory device name.

viii. Mention any box number that holds the value of a measuring unit.

(b) Explain the functions of USB, FIREWIRE, HDMI and SERIAL port.

Q. 5 **(a)** What are the advantages of database management system over file management system? Write down any EIGHT advantages.

(b) Complete the following table:

Classes	Bytes used for Network	Bytes used for Host	IP Address format	Maximum number of Network	Maximum Number of Host per Network
Class A	1	3	0nnnnnnn. hhhhhhhh. hhhhhhhh. hhhhhhh	126 (2^7-2)	16777214 (2^{24}-2)
Class B					
Class C					