Version No.				
3	0	0	7	2

ROLL NUMBER					

COMPUTER SCIENCE
HSSC–I
SECTION – A (Marks 13)

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

Answer Sheet No. _____

ہر سوال کے سامنے دیے گئے، کریکولم کے مطابق درست دائرہ کو پُر کریں۔ **Invigilator Sign.** _____

Fill the relevant bubble against each question according to curriculum: **Candidate Sign.** _____

	Question	A	B	C	D	A	B	C	D
1.	The relationship between entities **COLLEGE** and **DEPARTMENT** is:	Recursive	Unary	Binary	Ternary	○	○	○	○
2.	Which of the following is an output device?	Microphone	Speaker	Track ball	Mouse	○	○	○	○
3.	**Google Chrome** is an example of:	Open-Source software	Freeware	Shareware	Licensed software	○	○	○	○
4.	Which of the following is an example of sequential access memory?	Flash Memory	Hard Disk	Magnetic Tape	Blu-Ray Disk	○	○	○	○
5.	A memory card is an example of:	Cache memory	Chip memory	Magnetic memory	Optical memory	○	○	○	○
6.	A memory word that is to be stored in or fetched from memory must first be transferred into:	Memory address register	Data register	Memory buffer register	Accumulator register	○	○	○	○
7.	Which of the following ports is used to connect video devices?	Firewire	PS/2	Serial	Parallel	○	○	○	○
8.	Which of the following protocols is used at Session layer of OSI model?	X.25	TCP	NetBIOS	HTTP	○	○	○	○
9.	The IP address **172.168.12.110** is an example of following network class:	Class D	Class A	Class B	Class C	○	○	○	○
10.	TV remote is an example of following communication:	Infrared	Wi-Fi	Wi-Max	Bluetooth	○	○	○	○
11.	Which of the following refers to the minimum number of times an instance of one entity associated with the instances of related entity?	Modality	Hierarchy	Cardinality	Feasibility	○	○	○	○
12.	Which of the following is used in relationship between tables whose value matches with the primary key in another table?	Secondary key	Candidate key	Foreign key	Alternate key	○	○	○	○
13.	Which dependency is removed in **2NF**?	Multi valued	Partial functional	Fully functional	Transitive	○	○	○	○

COMPUTER SCIENCE HSSC–I

Time allowed: 2:40 Hours **Total Marks Sections B and C: 62**

SECTION – B (Marks 42)

Q. 2 Answer the following questions briefly. **(14 x 3 = 42)**

(i)	Differentiate between opensource software and licensed software with one example each.	03	OR	What is Bluetooth? Enlist any two applications of Bluetooth.	1+2
(ii)	Which chip memory is faster **SRAM** or **DRAM**? Give two reasons of your selection.	1+2	OR	What is MAN? Write down its two characteristics.	1+2
(iii)	Write two comparison points between 'volatile' and non-volatile' memories with one example each.	03	OR	Why is **'Cache'** memory used? (Give three reasons.)	03
(iv)	Complete the following table for the following types of instructions: **Instruction Type** / **Number of operands** / **Example** Zero-address One-address Two-address	03	OR	Draw an ER Diagram that shows cardinality and modality for the following situation: Each student may be registered for one or more courses. A course may have at least one student registered or have several students registered.	03
(v)	What is system bus? Write down the purpose of data bus.	1+2	OR	How is Form useful in database? Give three reasons	03
(vi)	What is the purpose of an expansion slot? Identify the most efficient expansion slot as well.	2+1	OR	How is a Super computer different from Microcomputer? Justify with three reasons.	03
(vii)	Which expansion card is required to connect to the internet? Give reasons of using this card.	1+2	OR	What is query? Enlist names of four queries.	1+2
(viii)	Compare **Half-duplex** and **Full-duplex** communication modes. (Any three points)	03	OR	Enlist three factors that affect the processing speed of a computer system.	03
(ix)	Compare Mesh and Bus network topologies in terms of architecture, reliability and expansion.	1x3	OR	Enlist any three roles of Database administrator.	03
(x)	What is WML? Write down its two features.	1+2	OR	Why is LCD better than CRT monitor? Justify your answer with three reasons.	03
(xi)	State any three tasks of Data Manipulation Language.	03	OR	Differentiate between Client-Server and Peer-to-Peer network architectures. (Any three points)	03
(xii)	What is control unit? List down three main components of control unit.	03	OR	Compare 'field' and 'record' with one example of each.	03
(xiii)	Identify the Primary key in the given MS-Access table, also mention suitable data type for any **four** fields: **Book ID** / **Title** / **Available** / **Publish Date** / **Price** 7110 / Python / No / 26/12/21 / 550 7111 / Oracle / Yes / 22/01/23 / 660	1+2	OR	What is Program control instruction? Give an example as well.	2+1
(xiv)	What is report? Enlist any two report layouts.	1+2	OR	Is **BIOS** hardware or software? How is it helpful in performance of the computer system?	1+2

SECTION – C (Marks 20)

Attempt the following questions. **(4 x 5 = 20)**

Q.3	What is an application software? Explain any two types of application software with one example each.	1+2 +2	OR	Why is wireless communication more popular? Give five reasons.	1x5
Q.4	What is an optical disk? Describe its working mechanism with an advantage.	2+3	OR	What is the purpose of OSI model? Explain the functions of Transport layer and Application layer.	1+2 +2
Q.5	What is register? Differentiate between any **TWO** examples of Special-purpose registers.	1+4	OR	What are Pointing input devices? Explain the purpose and application of any **TWO** devices.	1+4
Q.6	What is database model? How is Hierarchical database model different from Network database model? Give at least **four** reasons.	1+4	OR	What is a Port? How are USB and HDMI ports helpful for the working of computer system?	1+2 +2

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SECTION – A (Marks 13)

Time allowed: 20 Minutes

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

Answer Sheet No. _____

ہر سوال کے سامنے دیے گئے، کریکولم کے مطابق درست دائرہ کو پُر کریں۔ **Invigilator Sign.** _____

Fill the relevant bubble against each question according to curriculum: **Candidate Sign.** _____

	Question	A	B	C	D	A	B	C	D
1.	The relationship between entities **AIRLINE** and **TICKET** is:	Recursive	Unary	Binary	Ternary	○	○	○	○
2.	Which of the following is an input device?	Microphone	Speaker	Display screen	Plotter	○	○	○	○
3.	Microsoft Office is an example of:	Open-Source software	Freeware	Shareware	Licensed software	○	○	○	○
4.	Which of the following memory types is considered as 'volatile'?	Memory card	DVD	RAM	PROM	○	○	○	○
5.	A flash memory is an example of:	Cache memory	Chip memory	Magnetic memory	Optical memory	○	○	○	○
6.	Which register holds the results of ALU operations?	Accumulator register	Data register	Base register	Counter register	○	○	○	○
7.	Which expansion slot has the **highest** video performance?	PCI Express	PCI	AGP	SATA	○	○	○	○
8.	Which of the following protocols is used at Application layer of OSI model?	X.25	TCP	HTTP	NetBIOS	○	○	○	○
9.	The IP address **192.168.123.100** is an example of following network class:	Class D	Class A	Class B	Class C	○	○	○	○
10.	Which of the following is an application of Geostationary Earth Orbit?	Weather forecasting	GPS	Satellite imaging applications	Space shuttle	○	○	○	○
11.	Which of the following refers to the maximum number of times an instance of one entity associated with the instances of related entity?	Modality	Hierarchy	Cardinality	Feasibility	○	○	○	○
12.	Which of the following database objects represents results in a presentable way?	Report	Table	Form	Query	○	○	○	○
13.	Which dependency is removed in **3NF**?	Multi valued	Partial functional	Fully functional	Transitive	○	○	○	○

COMPUTER SCIENCE HSSC–I

Time allowed: 2:40 Hours **Total Marks Sections B and C: 62**

SECTION – B (Marks 42)

Q. 2 Answer the following questions briefly. **(14 x 3 = 42)**

(i)	Differentiate between shareware and freeware with one example each.	03	OR	Why is non-impact printer better than impact printer? Justify your answer with three reasons.	03
(ii)	Write down any three differences between sequential access and direct access devices.	03	OR	How is 'query' useful in database? Give three reasons.	03
(iii)	Why is EEPROM preferred over ROM? Mention three reasons.	03	OR	What is form? Enlist names of four views of forms.	1+2
(iv)	Complete the following table by identifying the registers as General or Special purpose. Also write down their use: Register | General/Special | Use MBR | | Program Counter | |	03	OR	Draw an ER Diagram that shows cardinality and modality for the following situation: Each student may be assigned to one or more projects or may not be assigned to a project. A project may have at least one student assigned or may have several students assigned.	03
(v)	What is system bus? Write down the purpose of control bus.	1+2	OR	What is GPS? Enlist any two applications of GPS.	1+2
(vi)	Which chip memory is faster DIMM or SIMM? Give two reasons of your selection.	1+2	OR	How is a Mainframe computer different from Microcomputer? Justify with three reasons.	03
(vii)	Which port is considered as **'Plug and Play'**? Why?	1+2	OR	What is Relational database model? Give example.	2+1
(viii)	Compare Synchronous and Asynchronous transmissions. (Any three points)	03	OR	What is VPN? Write down its two characteristics.	1+2
(ix)	Compare Star and Ring network topologies in terms of architecture, reliability and expansion.	03	OR	Differentiate between Circuit switching and Packet switching with one example each.	03
(x)	Write down any three limitations of Mobile communication system.	03	OR	What is Data transfer instruction? Give an example as well.	2+1
(xi)	State any three tasks of Data Definition Language.	03	OR	Is a Disk controller hardware or software? How is it helpful in performance of the computer system?	1+2
(xii)	List down the purposes of three steps of Instruction Cycle.	03	OR	Write down the difference between entity and attribute with examples.	03
(xiii)	Identify the Primary key in the given MS-Access table, also mention suitable data type for any ***four*** fields: Emp ID | Name | On Leave | DOB | Salary 2001 | Alex | No | 26/03/95 | 70000 2002 | Zeta | Yes | 22/10/98 | 65000	1+2	OR	What is memory word? How does its size affect the processing speed of a computer system?	1+2
(xiv)	What is a foreign key? Give example.	2+1	OR	Compare 'RAM" and 'Cache'. (Any three points)	03

SECTION – C (Marks 20)

Attempt the following questions. **(4 x 5 = 20)**

Q.3	What is system software? Explain any two types of system software with one example each.	1+2 +2	OR	What is wireless communication? Explain the use of any two types of short distance wireless communication.	1+2 +2
Q.4	What is magnetic disk? Describe its working mechanism with an advantage.	2+3	OR	What is the purpose of OSI model? Explain the functions of Session layer and Physical layer.	1+2 +2
Q.5	What is instruction format? Differentiate between one-address and two-address instructions with one example each.	1+2 +2	OR	What are scanning devices? Explain the purposes and applications of any two devices.	1+2 +2
Q.6	Differentiate between File management system and Database management system. (Any five points)	05	OR	What is an expansion card? How are sound card and modem card helpful for the working of a computer system?	1+2 +2