



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 نام مرکز کے حوالے کریں۔ کٹ کر دوبارہ
لیکھے کی اجازت نہیں ہے۔ سیاہ پینسل کا استعمال ممنوع ہے۔

| Version No. | | | |
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| 3 | 1 | 2 | 1 |

| ROLL NUMBER | | | | | |
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| 6 | 6 | 6 | 6 | 6 | 6 |
| 7 | 7 | 7 | 7 | 7 | 7 |
| 8 | 8 | 8 | 8 | 8 | 8 |
| 9 | 9 | 9 | 9 | 9 | 9 |

Answer Sheet No. _____

ہر سوال کے سامنے دیے گئے، کرکولم کے مطابق درست دائرہ کو پر کریں۔
Invigilator Sign. _____

Fill the relevant bubble against each question according to curriculum:

Candidate Sign. _____

| Question | Candidate Sign. | | | |
|--|------------------------------|---------------------------|---------------------------|---------------------------|
| | 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 | Ceilular | 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 2 nd 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.



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Do not use lead pencil.

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

| Version No. | | | |
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| ROLL NUMBER | | | | | |
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8 8 8 8 8 8
9 9 9 9 9 9

Answer Sheet No. _____

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

Fill the relevant bubble against each question according to curriculum:

Candidate Sign. _____

| Question | A B C D | | | | Candidate Sign. | | | |
|---|-------------------|-----------------|--------------------|---------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| | 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 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 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 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 3. Which one can be used to connect two dissimilar networks? | Bridge | Router | Switch | Ethernet Card | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. Which type of software is free for inspection, modification and distribution? | Malware | Freeware | Open source | Groupware | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. Which of the following is an impact printer? | Laser | Inkjet | Plotter | Dot matrix | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 6. Which of the following is NOT a social media network application? | Win Zip | Instagram | Twitter | Facebook | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 7. 1 GB = | 1024 KB | 1024 TB | 1024 Bytes | 1024 MB | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 8. USB flash drive is a type of _____ memory. | Optical | Electronic | Primary | Magnetic | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 9. Which of the following provides interface to local network? | Modem | BIOS | Parallel Port | NIC | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 10. Which of the following is an example of one-to-one relationship? | Person-Automobile | Mother-Daughter | Student-Reg Number | Person-Phone Number | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 11. Which of the following is NOT a data transfer instruction? | LD | XCHG | MUL | MOV | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 12. Which layer of the OSI model decides physical path to reach the destination? | Transport | Network | Application | Data Link | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 13. Which type of wireless communication is NOT limited to short distance? | Wi-Fi | Bluetooth | Infra-Red | Cellular | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 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 | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 15. Which standard provides the best performance for hard drives? | SATA | EIDE | FDD | IDE | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |



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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) Complete 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 | | |

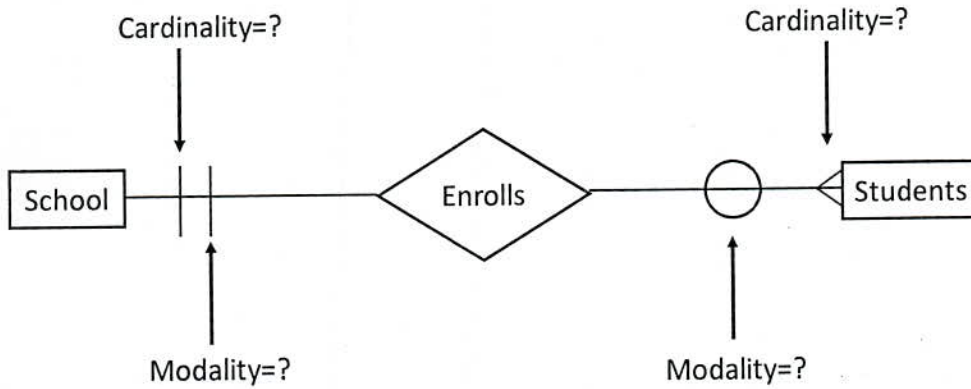
(xvi) Differentiate Select query with 'Group by' and 'Order by' clauses with one example.

SECTION – C (Marks 24)

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.



(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 | Onnnnnnn. hhhhhhhh. hhhhhhhh. hhhhhhhh | 126 (2 ⁷ -2) | 16777214 (2 ²⁴ -2) |
| Class B | | | | | |
| Class C | | | | | |