21

| Version No. | | | |
|---|---|---|---|
| 7 | 1 | 2 | 1 |

| ROLL NUMBER | | | | | |
|---|---|---|---|---|---|
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# 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 اوّل لازمی ہے۔ اس کے جوابات اسی صفحہ پر دے کر نظم مرکز کے حوالے کریں۔ کاٹ کر دوبارہ لکھنے کی اجازت نہیں ہے۔ لیڈ پنسل کا استعمال منوع ہے۔

**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 | A | B | C | D |
|---|---|---|---|---|---|---|---|---|---|
| 1. | The software embedded in electronic devices is called: | Firmware | Freeware | Shareware | Open source | ○ | ○ | ○ | ○ |
| 2. | Which of the following registers stores the result of ALU operation? | MAR | Data register | Counter register | Accumulator register | ○ | ○ | ○ | ○ |
| 3. | The instructions needed at the time of starting the computer are stored in: | RAM | Cache | ROM | Hard disk | ○ | ○ | ○ | ○ |
| 4. | Identify the **correct** one: | 88 KB is larger than 28 MB | 700 MB is larger than 30 GB | 1TB is smaller than 8 GB | 350 bytes is smaller than 5 MB | ○ | ○ | ○ | ○ |
| 5. | Flash memory is an example of: | Chip memory | Magnetic memory | Optical memory | Static memory | ○ | ○ | ○ | ○ |
| 6. | Which of the following is an example of CISC architecture? | Power PC | Intel 486 | Mobile phone | SUN'S SPARC | ○ | ○ | ○ | ○ |
| 7. | Which of the following memory chips was used in early computers? | DIMM | SIMM | DRAM | SRAM | ○ | ○ | ○ | ○ |
| 8. | The IP address 192.168.123.44 is an example of following type of network class: | Class A | Class B | Class C | Class D | ○ | ○ | ○ | ○ |
| 9. | Which of the following communication media uses light waves for transmitting information? | STP | Twisted pair cable | Coaxial cable | Fiber optic cable | ○ | ○ | ○ | ○ |
| 10. | Identify the **most suitable** network topology to establish a network at a college Computer lab with 30 computers: | Star topology | Bus topology | Ring topology | Mesh topology | ○ | ○ | ○ | ○ |
| 11. | Which device allows wireless devices to connect to a wired network using Wi-Fi? | NIC | Radio transceiver | Repeater | Access point | ○ | ○ | ○ | ○ |
| 12. | The relationship between entities STUDENT and COURSE is: | Unary | Binary | Ternary | Recursive | ○ | ○ | ○ | ○ |
| 13. | Which of the following dependency is removed in 2NF? | Partial | Associative | Transitive | Functional | ○ | ○ | ○ | ○ |
| 14. | Which of the following database objects shows results in a **presentable** way: | Table | Form | Query | Report | ○ | ○ | ○ | ○ |
| 15. | In MS-Access, a Form is a collection of design elements called: | Files | Controls | Views | Properties | ○ | ○ | ○ | ○ |

# 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) How is supercomputer different from microcomputer? Justify your answer with at least three reasons.

(ii) What is a scanner? Write down any one application of the following scanner types:

(a) Handheld (b) Flatbed

(iii) Why is LCD better than CRT? Support your answer with at least three reasons.

(iv) What is a port? Briefly explain the purpose of any two types of ports.

(v) Complete the following table by identifying registers as General or Special purpose. Also write down their use:

| Register | General/Special Purpose | Use |
|---|---|---|
| Base Register | | |
| Program Counter | | |
| Instruction Register | | |

(vi) Why do computers have expansion slots? Name the most common expansion slot. Give reason to support your answer.

(vii) Write down three differences between PROM and EPROM.

(viii) How is data bus different form address bus? Give three reasons.

(ix) Write down any three differences between Circuit Switching and Packet Switching Networks.

(x) How is SATA ribbon cable interface better than IDE? Support your answer with at least three reasons.

(xi) Give any three advantages of wireless network.

(xii) Write down the purpose and distance from the earth of the following satellites:

| Satellite | Purpose | Distance from the earth |
|---|---|---|
| LEO | | |
| MEO | | |
| GEO | | |

(xiii) Write down the suitable data types for the following fields in MS-Access:

| Employee ID | Employee name | On leave | Joining date | Gross pay (Rs) | Review comments |
|---|---|---|---|---|---|
| 100 | Akbar | No | 2-Dec-2014 | 63000 | Employee is a ..... |
| 101 | Saima | Yes | 15-Jun-2016 | 57000 | Employee is a ..... |
| 102 | Manan | No | 3-Aug-2018 | 51000 | Employee is a ..... |

(xiv) Differentiate 'Entity' and 'Attribute' with one example of each.

(xv) How are queries useful in database? Give any three reasons.

(xvi) Students enroll in different courses and each course is registered by multiple students. Draw an ER diagram that shows cardinality and modality for the said situation.

## *SECTION – C (Marks 24)*

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

**Q. 3 (a)** Explain three instruction formats with one example of each.

**(b)** Explain the function of the following layers of OSI model in detail. Also write down the name of protocol used at each layer.

| Layer name | Function | Protocol |
|---|---|---|
| Data Link | | |
| Network | | |
| Session | | |

**Q. 4 (a)** Explain the following types of System Software with one example each.

i. Operating System

ii. Utility Software

iii. Language Processor

**(b)** Explain any three features and any three requirements of Mobile communication system.

**Q. 5 (a)** Compare Star and Bus network topologies in terms of architecture, reliability, and expansion.

**(b)** Explain any three differences between Magnetic and Optical storage media in detail.