Version No.

Roll Number

Answer Sheet No. _____

Sign. of Candidate _____

Sign. of Invigilator _____

COMPUTER SCIENCE HSSC- I

SECTION – A (Marks 15)

Time allowed: 20 Minutes

Note: 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.**

Q.1. Fill the relevant bubble for each part. Each part carries one mark.

(1) Which software converts computer program to machine language?

A. Device driver O B. Application software O

C. Language processor O D. Utility program O

(2) Which of the following can execute about trillion instructions per second (TIPS)?

A. Mainframe O B. Minicomputer O

C. Microcomputer O D. Supercomputer O

(3) The device used to convert audio signals into electrical form is called:

A. Scanner O B. Plotter O

C. Microphone O D. Touch Pad O

(4) Which type of memory does the USB flash drive belongs to?

A. Solid State memory O B. Primary memory O

C. Magnetic memory O D. Optical memory O

(5) Which of the following is used to store a computer system's BIOS and can be updated without removing it from the circuit board?

A. RAM O B. ROM O

C. PROM O D. EEPROM O

(6) Which of the following memory devices has sequential access to data?

A. Magnetic disk O B. Optical memory O

C. Magnetic tape O D. Chip memory O

(7) Which of these buses selects a memory word for a read or write operation?

A. Data bus O B. Control bus O

C. Address bus O D. System bus O

(8) Which of these instructions will perform addition of two numbers?

A. Operation instruction O B. Shift instruction O

C. Comparison instruction O D. Data movement instruction O

(9) Which register controls the sequence in which instructions are fetched from memory for execution?

A. Memory buffer register O B. Program counter O

C. Data register O D. Counter register O

(10) What is BIOS?

A. Port O B. Non-volatile ROM chip O

C. Programs in RAM O D. Interface O

(11) Which port is generally used to connect video devices to the computer?

A. PS/2 port O B. USB port O

C. Fire wire port O D. Parallel port O

(12) Which interface provides connection to external devices?

A. Disk controller O B. Port O

C. Expansion slot O D. Memory slot O

(13) Which network device is used to connect a network to another network using different protocols?

A. Hub O B. Gateway O

C. Router O D. Switch O

(14) Which OSI layer decides the physical path-way taken by data to reach its destination?

A. Network layer O B. Physical layer O

C. Transport layer O D. Data link layer O

(15) Which of the following uses a start/stop bit for data transmission?

A. Half-duplex transmission O B. Full-duplex transmission O

C. Synchronous transmission O D. Asynchronous transmission O

COMPUTER SCIENCE HSSC-I

Time allowed: 2: 40 Hours | Total Marks: 60

Note: Answer any twelve parts from Section 'B' and attempt any three questions from Section 'C' on the separately provided answer book. Write your answers neatly and legibly.

SECTION – B (Marks 36)

Q.2. Attempt any **TWELVE** parts from the following. All parts carry equal marks. **(12×3=36)**

i. Describe what is meant by Pixel, Resolution, and Dot Pitch with respect to the features of a monitor? (3)

ii. Write down any one application of the following scanner types. (3)

a. Flatbed Scanner b. Hand-held Scanner c. Barcode Reader

iii. Define firmware and discuss two instances when it can be used. (3)

iv. Define Memory Word. Explain with an example how the Word size is related to size of accessible memory. (3)

v. State the purpose of cache memory. Draw a diagram that depicts all types of cache memory and their linkage with other parts of a system. (3)

vi. State any three advantages of using Flash/Chip memory. (3)

vii. Describe the basic function of all three types of buses. (3)

viii. Write three instructions for transferring data from one location in the computer to another. Also describe briefly how each instruction works. (3)

ix. Define program control. State name and purpose of two common program control instructions. Instructions. (3)

x. Define AGP and describe its functionality. (3)

xi. Describe the use of Dial-up and ISDN modems. State their transmission speeds. (3)

xii. Explain how SATA is advantageous over EIDE interface. What is the maximum data rate achieved by any SATA interface? (3)

xiii. Define asynchronous and synchronous transmission. Which one is faster and why? (3)

xiv. Describe how satellite communication system works. State its major drawback? (3)

xv. State any three characteristics of LAN. (3)

xvi. State the functions performed by session layer which enable communication between two applications or pieces of the same application. (3)

SECTION – C (Marks 24)

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

Q.3. a. Why IP addresses are divided into different classes and which classes are defined in TCP/IP? State the 1st Octet Decimal range and one address of Class A and Class B address. (2+4)

b. Describe how ALU works? Explain with the example of adding two numbers. (6)

Q.4. a. Describe the three steps involved in instruction cycle. (2+2+2)

b. Explain the purpose of following layers of OSI model. (2+2+2)

i. Transport Layer ii. Data Link Layer iii. Application Layer

Q.5. a. Define the following Ports and state their usage. (2+2+2)

i. USB Port ii. Fire Wire Port iii. HDMI port

b. Differentiate between D-RAM and S-RAM with respect to their memory cell, mode of operation, and speed. Which RAM needs to be refreshed periodically and why? (3+3)