FEDERAL BOARD OF INTERMEDIATE AND SECONDARY EDUCATION
H-8/4, ISLAMABAD

No. 1-42/FBISE/RES/HSSC/610   December 14, 2022

Subject: **RESTRUCTURED MODEL PAPERS – COMPUTER SCIENCE CLASSES XI AND XII**

FBISE persistently strives for improving and standardizing its examination and assessment system. In pursuit of this strive for excellence, it has been decided to restructure Section C of Model Papers in the subject of Computer Science at HSSC level in order to make them compatible with E-Sheet.

2.   In view of the above and in order to use single standardized E-sheet for four science subjects i.e Physics, Chemistry, Biology and Computer Science jointly, section C of the Model Question Papers in the subject of Computer Science for class-XI and XII has been restructured to the extent that number of questions of Section C have been reduced from four to three out of which students will attempt any two questions. Furthermore, marks of each question have been increased from eight (8) to twelve (12).

3.   Model Question Papers have been uploaded accordingly on FBISE website (www.fbise.edu.pk) which may be downloaded.

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Heads of Educational Institutions
affiliated at HSSC levels with FBISE

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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.**

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

1.   Which one of the following is the most powerful digital computer system?
   A.   Mainframe Computer ◯   B.   Minicomputer   ◯
   C.   Microcomputer   ◯   D.   Supercomputer   ◯

2.   Which one of the following is the most suitable to print salary slips of 2000 employees on a very cheap cost?
   A.   Dot matrix printer   ◯   B.   Laser printer   ◯
   B.   Desk jet printer   ◯   D.   Plotter   ◯

3.   Cache Memory works between:
   A.   RAM and Processor   ◯ B.   RAM and ROM   ◯
   C.   Processor and Hard Disk ◯ D.   ROM and Hard Disk ◯

4.   In which of the following categories a memory card lies?
   A.   Magnetic Memory   ◯   B.   Secondary Memory ◯
   C.   Optical Memory   ◯   D.   Flash Memory   ◯

5.   How many memory locations can be addressed with 64-bit address bus?
   A.   32   ◯   B.   64   ◯
   C. 2^{32} ◯   D. 2^{64} ◯

6.   How many different operations can be performed by CPU, if opcode of an instruction format consists of 4 bits?
   A.   4   ◯   B.   8   ◯
   C.   16   ◯   D.   32   ◯

7.   Which one of the following expansion slots has highest video performance?
   A.   PCI   ◯   B.   PCI Express ◯
   C.   SATA   ◯   D.   AGP   ◯

8. Which one of the following registers holds the address of the next instruction to be executed?
   A. Program Counter ○   B. Instruction Register ○
   C. Counter Register ○   D. Data Register ○

9. The IP Address 191.10.1.0 lies in:
   A. Class A ○   B. Class B ○
   C. Class C ○   D. Class D ○

10. Email sending mechanism is an example of the following mode of_____ communication.
    A. Simplex ○   B. Simple Duplex ○
    C. Half Duplex ○   D. Full Duplex ○

11. Cellular communication dividing the physical region into sections is called:
    A. Pods ○   B. Cells ○
    C. Cubes ○   D. Sectors ○

12. Which one of the following wireless technologies is used in TV remotes and Toys?
    A. Infrared ○   B. Bluetooth ○
    C. Wi-Fi ○   D. Wi-Max ○

13. What is the type of this statement? "**Create table Student".**
    A. DCL ○   B. DDL ○
    C. DXL ○   D. DML ○

14. The relationship between entities AUTHOR and BOOK is:
    A. Unary ○   B. Binary ○
    C. Ternary ○   D. Recursive ○

15. Identify the cardinality of the following relationship:
    One COLLEGE can have many DEPARTMENTs, One DEPARTMENT belongs to one COLLEGE.
    A. One-to-One ○   B. One-to-Many ○
    C. Many-to-Many ○   D. Many-to-One ○
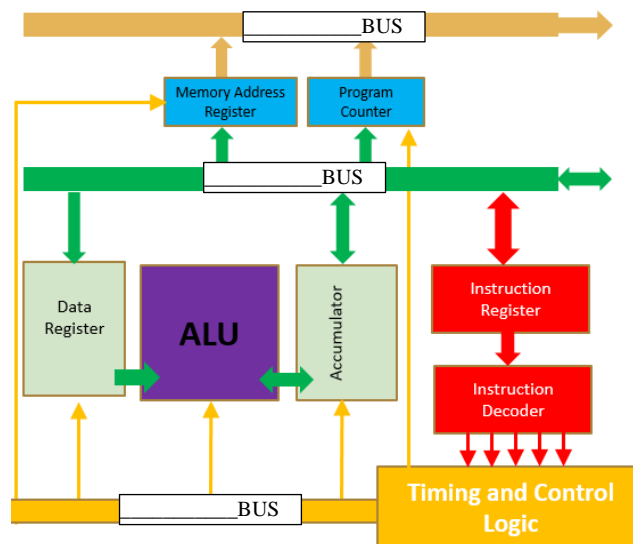
_____

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. Differentiate between hard copy and soft copy devices along with one example of each. (1+2)

ii. Write down any one application of the following scanner types: (1+1+1)
a. Handheld scanner   b. Flatbed scanner   c. Optical scanner

iii. Define utility software, language processor and device driver. (2+1)

iv. Differentiate between Intel P4 and AMD Athlon processors with reference to clock speed, bus width and architecture. (3)

v. What is an Instruction Cycle? Illustrate with diagram. (2+1)

vi. Write down three differences between SIMM and DIMM memory chips. (1+1+1)

vii. The following Microprocessor diagram has three internal system buses, observe the diagram carefully and name the Buses shown in the diagram. (3)
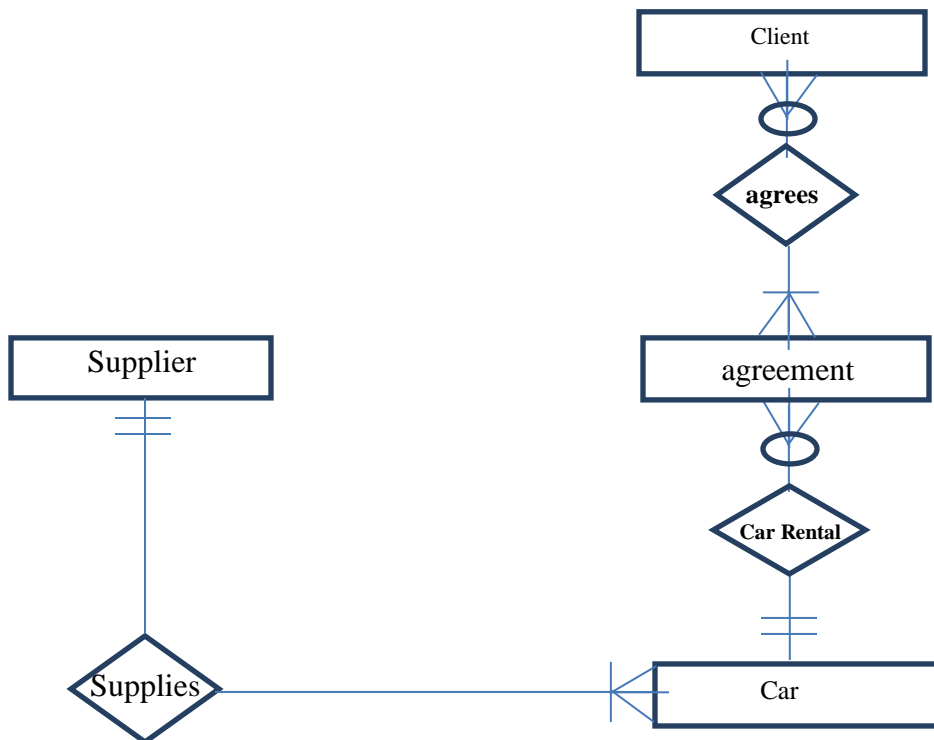

viii. Differentiate between Client-Server and Peer-to-Peer network architecture. (3)

ix. Categorize the following topologies as per their characteristics (Star, Ring, Bus, Mesh). (1.5+1.5)

Expensive	Least Cabling

x.   Give any three limitations of Mobile Communication System.   (1+1+1)

xi.   Complete the required information in the following table against the said satellites.
                                                                            (1+1+1)

Satellites	Distance from the Earth	Purpose
GEO		
MEO		
LEO		

xii.   Write down any one usage of Wi Max, Bluetooth and Infra-Red technologies.
                                                                            (1+1+1)

xiii. A team consists of many players and a player plays for only one team. Draw
       an ER diagram and identify cardinality for the said situation.   (2+1)

xv.   Understand the ER Diagram and write the answers of the following questions:

       i.   List one example of one-to-many relationship.
       ii.   Mention Entities used in ER diagram.
       iii.   How many minimum cars supplier must supplies?

xv.   What are Columnar, Tabular and Datasheet Form views?   (1+1+1)

xvi.   Specify the suitable data types for Roll No, DOB and Address. Identify the
       suitable Primary key. Also write down the number of tuples and attributes in the
       table.   (1.5+0.5+1)

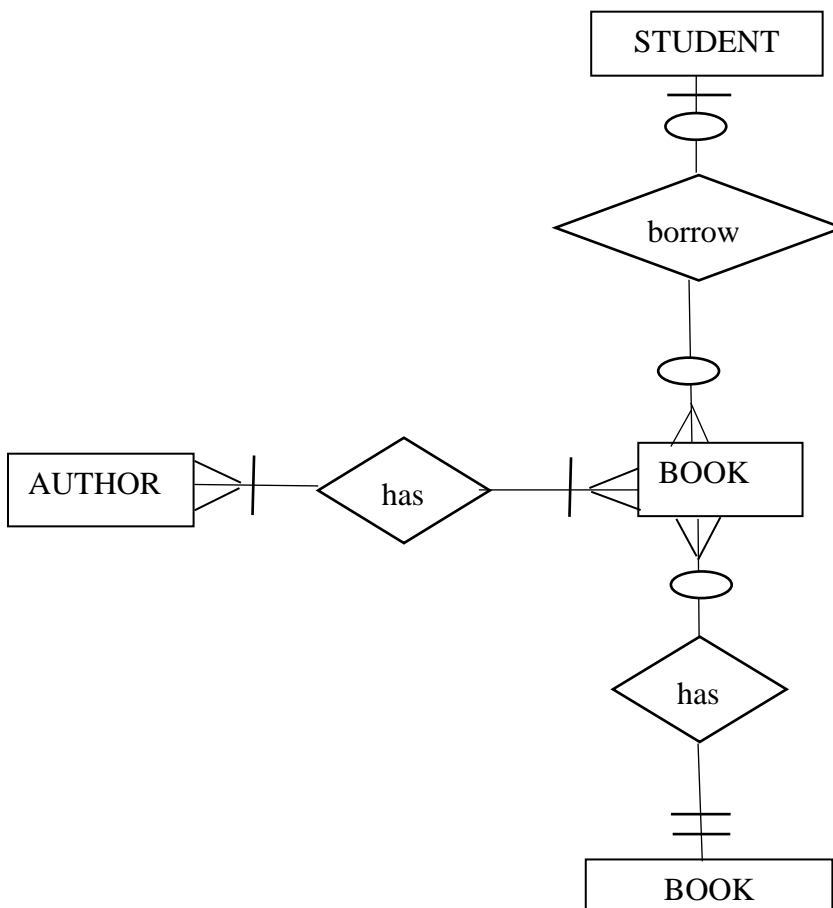| Registration No.	Roll No.	Name	DOB	Address	Phone
CS12/05	1	ALI	12-05-1999	G-7 Islamabad	9233658721
CS34/21	2	AMNA	26-08-1999	Cantt Rawalpindi	9234737536

SECTION – C (Marks 24)

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

Q.3 (a) Discuss three types of CPU instructions with one example each. (2+2+2)
  (b) Explain the purpose of following layers of OSI model. (2+2+2)
    i) Session layer   ii) Data link layer   iii) Application layer

Q.4 (a) Explain the following types of System software with one example each. (2+2+2)
   i) Operating System   ii) Device Driver   iii) Utility Software
  (b) Explain the purpose and application of any three types of short distance wireless
    communications. (2+2+2)

Q.5 (a) What is the role of register in execution? Also explain the purpose of following
    registers: (1+2+2=5)
    i) Program Counter   ii) Instruction Register
  (b) Understand the Entity Relationship Diagram and answer the following questions:
    (1x7=7)

  i. Identify one example of one-to-many relationship.
  ii. List entities used in ER diagram.
  iii. Indicate the degree of relationship between BOOK and AUTHOR.
  iv. Identify the maximum cardinality between BOOK and BOOK CATEGORY.
  v. How many maximum STUDENTs borrow a BOOK?
  vi. How many minimum STUDENTs can borrow a BOOK?
  vii. How many minimum BOOKs available in a BOOK CATEGORY?

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Note: **The distribution of marks of the sub-parts of each question of 12 marks may vary according to nature of questions.**