

Version No.			

ROLL NUMBER						

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2	2	2	2
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6	6	6	6
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Answer Sheet No. _____

Sign. of Candidate _____

Sign. of Invigilator _____

COMPUTER SCIENCE HSSC-I (2nd Set)
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 pointing device is popular with ATM machines?
 A. Touch Pad B. Trackball
 C. Touch Screen D. Light Pen
- (2) Which device reads the information of owner from Credit Card?
 A. Bar Code Reader B. Magnetic Card Reader
 C. Optical Scanner D. Handheld Scanner
- (3) What is the full form of WAP?
 A. Wireless Access Place B. Wireless Access Protocol
 C. Wireless Access Point D. Wireless Access Portion
- (4) Which one of the following Orbits is at the distance of 22,000 miles from the surface of the Earth?
 A. GEO B. MEO
 C. LEO D. HEO
- (5) Which one of the following is an example of One-to-Many relationship?
 A. Class → Teacher
 B. College Campus → Teacher
 C. College → Principal
 D. Country → Capital
- (6) Which device use spindle to hold the disk(s)?
 A. Compact Disk B. Floppy Disk
 C. Hard Disk D. DRAM
- (7) Which device have instructions to load operating system from hard disk to RAM?
 A. RAM B. Cache
 C. ROM D. Register

- (8) Which theoretical foundation of a data base determines that how data is stored, organized, and manipulated?
- A. Database Model B. Database Structure
C. Database Design D. Database Architecture
- (9) Which component generates a signal to execute an instruction?
- A. ALU B. Decoder
C. Cache D. Timing & Control Logic
- (10) Which one of the following is uni-directional bus?
- A. Data B. Network
C. Address D. System
- (11) Which one of the following is Data Transfer Instruction?
- A. STORE B. LOOP
C. SHIFT D. JMP
- (12) For which purpose Class C is used?
- A. Small size network B. Multicasting
C. Large size network D. Broadcasting
- (13) Which one of the following Network devices is used to forward data packets across similar or different networks?
- A. Server B. Router
C. Modem D. Gateway
- (14) Which datatype is most suitable for storing address of Employee?
- A. Short Text B. Long Text
C. Yes/No D. Date/Time
- (15) Which one of the following port is not replaced by USB port?
- A. Serial B. Firewire
C. Parallel D. PS/2
-

Federal Board HSSC-I Examination
Computer Science Model Question Paper
(Curriculum 2009)

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.

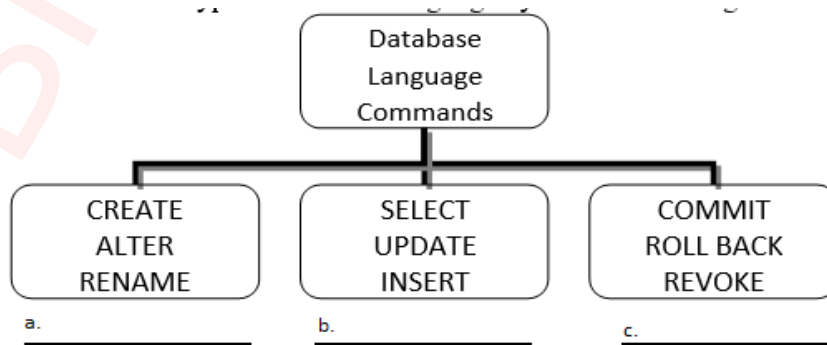
SECTION – B (Marks 36)

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

- i. Why **LCD** is better than **CRT** monitors? Justify your answer with three reasons.
- ii. Write down one example of each Productivity Software, Open-Source Software and Device Driver.
- iii. Which pointing device is available in laptop? How it differs from a mouse? Give two reasons.
- iv. What are the two basic components of CPU? Illustrate with diagram.
- v. What is Memory Word? How size of Memory word affects the speed of computer?
- vi. Write down the purpose of **EPROM** and **EEPROM**.
- vii. Which port is **plug and play**? Why is it called plug and play? Give two reasons.
- viii. Write down the functions of **Memory Address Register** and **Program Counter**? How are they linked?
- ix. Complete the following grid according to the criteria given.

Criteria	OSI	TCP/IP
Developed by		
No of Layers		
Model Type		

- x. Write down any three differences between **CISC** and **RISC**.
- xi. Write down three applications of **Virtual Private Network**?
- xii. What are three components required for **Mobile Communication Network**.
- xiii. What is **Wireless Network**? Give one advantage and one disadvantage.
- xiv. In an organization, an employee assigned a single login and he work under only one department. Draw ER diagram of given scenario.
- xv. Determine the type of database language by the commands given of each type:



xvi. Select the suitable datatypes for respective fields.

Book Id	Book Title	Publish Date	Available	Price	Remarks
3625	Network Fundamentals	26-Feb-2018	Yes	800\$	Book covers the topics....
3626	Oracle SQL	16-June-2005	No	900\$	Book covers the topics....
3627	Introduction to Computer	12-Dec-2011	Yes	745\$	Book covers the topics....

SECTION – C (Marks 24)

Note: Attempt any **THREE** questions. All questions carry equal marks. (3 × 8 = 24)

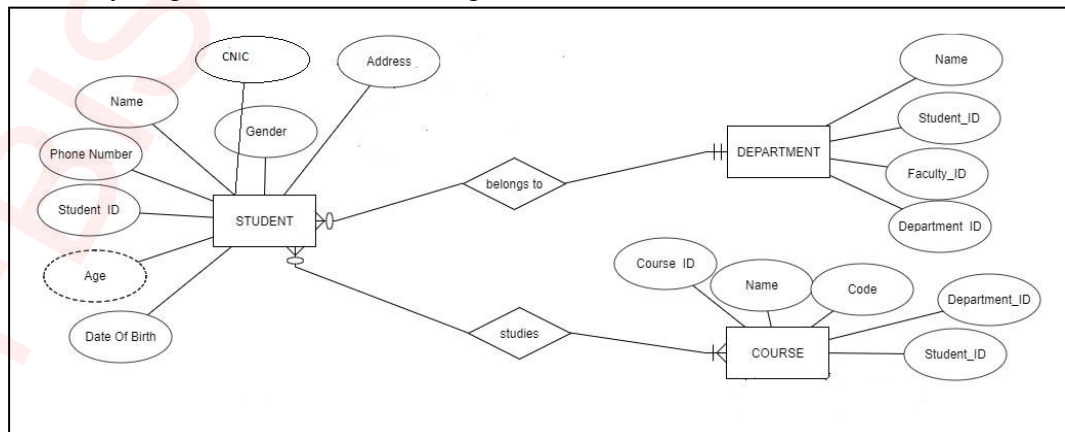
- Q.3** a. What is an Instruction? Briefly explain three types of instructions with example. (4)
 b. Read the given description carefully and complete the following grid: (4)

1	2	3
Description	Name of Storage Device	Category of Storage: Primary/Secondary
Volatile memory that is used as cache memory and does not need to be recharged		
Volatile memory that uses laser beam to read/write data and have smaller and very densely packed bumps due to which it has largest storage capacity		
Non-volatile memory that uses electric current to rewrite data and work like flash memory		
Non-volatile memory in which data is accessed sequentially and mostly used for backing purpose		

- Q.4** Describe the following classification of computers with their applications in daily life:
 i. Supercomputer ii. Mainframe Computer (2+2+2+2)
 iii. Microcomputer iv. Mobile Computing

Q.5 Discuss the **Ring** and **Mesh** topologies, with respect to advantages and disadvantages. Illustrate with the help of diagram. (4+4)

- Q.6** a. What is Primary Key, Foreign Key, Alternate and Candidate Key? (4)
 b. Also identifies them in the following ER-diagram. Mention the cardinality and modality of given entities in the diagram. (2+2)



COMPUTER SCIENCE HSSC-I (2nd Set)
Student Learning Outcomes Alignment Chart
(Curriculum 2009)

Sr No	Section: Q. No. (Part no.)	Contents and Scope	Student Learning Outcomes	Cognitive Level **	Allocated Marks in Model Paper
1	A: 1(i)	1.3 Computer Hardware	ii) Describe the Input devices <ul style="list-style-type: none"> • Pointing devices 	A	1
2	A:1(ii)	1.3 Computer Hardware	Magnetic card/Devices based system.	U	1
3	A: 1(iii)	6.4 Mobile Device communication	iii) Explain the architecture for communications over mobile devices <ul style="list-style-type: none"> • Web Protocol stack (HTTP/TCP/IP) • WML • WAP 	K	1
4	A: 1(iv)	6.3 Long Distance Wireless Communication	Explain the following types of long-distance wireless communications: <ul style="list-style-type: none"> • Geostationary Earth Orbit (GEO) • Medium Earth Orbit (MEO) • Low Earth Orbit (LEO) 	U	1
5	A: 1(v)	7.4 Data Modeling and Entity-Relationship	iii) Draw Entity-Relationship (ER) diagrams for the systems like:	A	1
6	A: 1(vi)	2.3 Secondary Memory	iii) Describe the following types of magnetic memory, and optical disk with their working mechanism, advantages and disadvantages: <ul style="list-style-type: none"> • Magnetic tapes • Magnetic disks • Optical disks (CD, DVD, Blue Ray) 	U	1
7	A: 1(vii)	2.2 Main Memory	iii) Explain the following fundamental types of computers memory: <ul style="list-style-type: none"> • ROM 	U	1
8	A: 1(viii)	7.1 Introduction	vii) Describe the following types of database models:	K	1
9	A: 1(ix)	3.1 Inside CPU	i) Describe the basic components of CPU:	U	1
10	A: 1(x)	3.1 Inside CPU	iii) Explain the system bus and its types: <ul style="list-style-type: none"> • Data bus • Address bus • Control bus 	U	1

11	A: 1(xi)	3.2 CPU Operations	i) Define instruction and its types	U	1
12	A: 1(xii)	5.3 TCP/IP	iv) Describe IP Addressing scheme (Classes, Subnets, Masks)	A	1
13	A: 1(xiii)	5.1 Introduction	Explain the following: • Communication Devices (Switch, Router, Gateway)	U	1
14	A: 1(xiv)	8.2 Working with	ii) Identify various available data types	U	1
15	A: 1(xv)	4.2 Ports and Slots on the Motherboard	i) Describe the following Ports:	U	1
16	B: 2(i)	2.1 Introduction	Define the following: - Memory WORD	U	3
17	B: 2(ii)	1.2 Computer Software	iv) Elaborate the following terms • Device Driver • Open-source software • Productivity Software	U	3
18	B: 2(iii)	1.3 Computer Hardware	ii) Describe the Input devices • Pointing devices	U	3
19	B: 2(iv)	3.1 Inside CPU	i) Describe the basic components of CPU : • Arithmetic and Logic Unit(ALU) • Control Unit (CU)	A	3
20	B: 2(v)	2.3 Secondary Memory	iii) Describe the following types of magnetic memory, and optical disk with their working mechanism, advantages and disadvantages: • Magnetic tapes • Magnetic disks Optical disks (CD, DVD, Blue Ray)	K+U	3
21	B: 2(vi)	2.2 Main Memory	iii) Explain the following fundamental types of computer memory: • ROM - PROM - EPROM - EEPROM	U	3
22	B: 2(vii)	4.2 Ports and Slots on the Motherboard	i) Describe the following Ports: • Serial Ports • Parallel Ports • PS/2 Port • USB port Fire Wire port	K+U	2+1
23	B: 2(viii)	3.1 Inside CPU	ii) Describe the functions of the following types of registers: • General purpose registers: - Accumulator (AC)	U	3

			<ul style="list-style-type: none"> - Base register - Counter register - Data Register (DR) <ul style="list-style-type: none"> • Special purpose registers: - Instruction Register (IR) - Memory Address Register (MAR) - Memory Buffer Register (MBR) - Program Counter (PC) 		
24	B: 2(ix)	5.3 TCP/IP	ii) Compare the TCP sites with OSI model	U	3
25	B: 2(x)	5.1 Introduction	<p>Explain the following:</p> <ul style="list-style-type: none"> • Communication Media (Guided, Un-Guided) 	U	3
26	B: 2(xi)	5.1 Introduction	<p>Explain the following:</p> <p>Network Types (LAN, MAN, WAN, VPN)</p>	U	3
27	B: 2(xii)	6.4 Mobile Device communication	i) Explain the requirements of mobile communication	K	3
28	B: 2(xiii)	6.1 Introduction	<p>i) Explain a wireless network</p> <p>ii) Explain the advantages and disadvantages of wireless networks</p>	K	1+2
29	B: 2(xiv)	7.4 Data Modeling and Entity-Relationship Diagram	iii) Draw Entity-Relationship (ER) diagrams for the systems	A	3
30	B: 2(xv)	7.1 Introduction	<p>viii) Explain the following types of database languages for relational databases:</p> <ul style="list-style-type: none"> • Data Definition Language (DDL) • Data Manipulation Language (DML) Data Control Language (DCL) 	U	3
31	B: 2(xvi)	8.2 Working with Tables	ii) Identify various available data types	U	3
32	C: 3(a)	3.2 CPU Operations	i) Define instruction and its types	K	4
33	C: 3(b)	2.2 Main Memory 2.3 Secondary Memory	<p>iii) Explain the following fundamental types of computers memory:</p> <ul style="list-style-type: none"> • RAM - Static RAM • ROM - EEPROM <p>iii) Describe the following types of magnetic memory, and optical disk with their working mechanism, advantages and disadvantages:</p>	U	4

			<ul style="list-style-type: none"> • Magnetic tapes • Magnetic disks • Optical disks (CD, DVD, Blue Ray) 		
34	C: 4	1.1 Introduction to Computer	iii) Define and classify. (Microcomputer, Mainframe, Super, Mobile Computing)	K+A	4+4
35	C: 5	5.1 Introduction	Explain the following: Network Topologies (Star, Ring, Bus, Mesh)	K+U	6+2
36	C: 6	7.4 Data Modeling and Entity-Relationship Diagram	i) Explain the following through pictorial examples: <ul style="list-style-type: none"> • Keys 	K+U	4+4

****Cognitive Level**

K: Knowledge U: Understanding A: Application

COMPUTER SCIENCE HSSC-I (2nd Set)

Table of Specification

Assessment Objectives		Unit 1: Overview of Computer System 10%	Unit 2: Computer Memory 10%	Unit 3: Central Processing Unit 10%	Unit 4: Inside System Unit 15%	Unit 5: Network Communication and Protocols 10%	Unit 6: Wireless Communications 10%	Unit 7: Database Fundamentals 15%	Unit 8: Database Development 20%	Cognitive Level Marks	Cognitive Level Total Marks: 95	Cognitive Level %
Knowledge	Section A						1(iii)(1)	1(viii)(1)		2	28	29.5%
	Section B		2(v)(1)		2(vii)(1)		2(xii, xiii)6			8		
	Section C	4(4)		3(a)(4)		5(6)		6(4)		18		
Understanding	Section A	1(ii)(1)	1(vi, vii)2	1(ix, x, xi)3	1(xv)1	1(xiii)1	1(iv)1		1(xiv)1	10	49	51.6%
	Section B	2(ii)3, 2(iii)3	2(i)(3) 2(v)(2), 2(vi)(3)	2(viii)3	2(vii)(2)	2(ix, x, xi)9			2(xvi)3	34		
	Section C		3(b)(4)					6b(4)		8		
Application	Section A	1(i)1				1(xii)1		1(v)1		3	18	18.9%
	Section B			2(iv)3				2(xiv)3 2(xv)3		6		
	Section C	4(4)				5(2)				6		
Total Marks		16	15	13	4	19	8	16	4	95		100

KEY:

1(1)(01)

Question No (Part No.) (Allocated Marks)

Note: (i) The policy of FBISE for knowledge based questions, understanding based questions and application based questions is approximately 30% knowledge based, 50% understanding based, 20% application based.

(ii) The total marks specified for each unit/content in the table of specification is only related to this model question paper.

(iii) The level of difficulty of the paper is approximately 40% easy, 40% moderate, 20% difficult