

# COMPUTER SCIENCE HSSC-I

**Time allowed: 2:40 Hours**

**Total Marks Sections B and C: 62**

## SECTION – B (Marks 42)

**Q. 2 Answer the following questions briefly.**

**(14 x 3 = 42)**

(i)	Differentiate between shareware and freeware with one example each.	03	OR	Why is non-impact printer better than impact printer? Justify your answer with three reasons.	03															
(ii)	Write down any three differences between sequential access and direct access devices.	03	OR	How is 'query' useful in database? Give three reasons.	03															
(iii)	Why is EEPROM preferred over ROM? Mention three reasons.	03	OR	What is form? Enlist names of four views of forms.	1+2															
(iv)	Complete the following table by identifying the registers as General or Special purpose. Also write down their use: <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 20%;">Register</th> <th style="width: 20%;">General/Special</th> <th style="width: 20%;">Use</th> </tr> </thead> <tbody> <tr> <td>MBR</td> <td></td> <td></td> </tr> <tr> <td>Program Counter</td> <td></td> <td></td> </tr> </tbody> </table>	Register	General/Special	Use	MBR			Program Counter			03	OR	Draw an ER Diagram that shows cardinality and modality for the following situation: Each student may be assigned to one or more projects or may not be assigned to a project. A project may have at least one student assigned or may have several students assigned.	03						
Register	General/Special	Use																		
MBR																				
Program Counter																				
(v)	What is system bus? Write down the purpose of control bus.	1+2	OR	What is GPS? Enlist any two applications of GPS.	1+2															
(vi)	Which chip memory is faster DIMM or SIMM? Give two reasons of your selection.	1+2	OR	How is a Mainframe computer different from Microcomputer? Justify with three reasons.	03															
(vii)	Which port is considered as 'Plug and Play'? Why?	1+2	OR	What is Relational database model? Give example.	2+1															
(viii)	Compare Synchronous and Asynchronous transmissions. (Any three points)	03	OR	What is VPN? Write down its two characteristics.	1+2															
(ix)	Compare Star and Ring network topologies in terms of architecture, reliability and expansion.	03	OR	Differentiate between Circuit switching and Packet switching with one example each.	03															
(x)	Write down any three limitations of Mobile communication system.	03	OR	What is Data transfer instruction? Give an example as well.	2+1															
(xi)	State any three tasks of Data Definition Language.	03	OR	Is a Disk controller hardware or software? How is it helpful in performance of the computer system?	1+2															
(xii)	List down the purposes of three steps of Instruction Cycle.	03	OR	Write down the difference between entity and attribute with examples.	03															
(xiii)	Identify the Primary key in the given MS-Access table, also mention suitable data type for any <i>four</i> fields: <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Emp ID</th> <th style="width: 15%;">Name</th> <th style="width: 10%;">On Leave</th> <th style="width: 10%;">DOB</th> <th style="width: 15%;">Salary</th> </tr> </thead> <tbody> <tr> <td>2001</td> <td>Alex</td> <td>No</td> <td>26/03/95</td> <td>70000</td> </tr> <tr> <td>2002</td> <td>Zeta</td> <td>Yes</td> <td>22/10/98</td> <td>65000</td> </tr> </tbody> </table>	Emp ID	Name	On Leave	DOB	Salary	2001	Alex	No	26/03/95	70000	2002	Zeta	Yes	22/10/98	65000	1+2	OR	What is memory word? How does its size affect the processing speed of a computer system?	1+2
Emp ID	Name	On Leave	DOB	Salary																
2001	Alex	No	26/03/95	70000																
2002	Zeta	Yes	22/10/98	65000																
(xiv)	What is a foreign key? Give example.	2+1	OR	Compare 'RAM' and 'Cache'. (Any three points)	03															

## SECTION – C (Marks 20)

**Attempt the following questions.**

**(4 x 5 = 20)**

Q.3	What is system software? Explain any two types of system software with one example each.	1+2+2	OR	What is wireless communication? Explain the use of any two types of short distance wireless communication.	1+2+2
Q.4	What is magnetic disk? Describe its working mechanism with an advantage.	2+3	OR	What is the purpose of OSI model? Explain the functions of Session layer and Physical layer.	1+2+2
Q.5	What is instruction format? Differentiate between one-address and two-address instructions with one example each.	1+2+2	OR	What are scanning devices? Explain the purposes and applications of any two devices.	1+2+2
Q.6	Differentiate between File management system and Database management system. (Any five points)	05	OR	What is an expansion card? How are sound card and modem card helpful for the working of a computer system?	1+2+2

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## SECTION – B (Marks 42)

**Q. 2 Answer the following questions briefly.**

**(14 x 3 = 42)**

(i)	Differentiate between opensource software and licensed software with one example each.	03	OR	What is Bluetooth? Enlist any two applications of Bluetooth.	1+2															
(ii)	Which chip memory is faster <b>SRAM</b> or <b>DRAM</b> ? Give two reasons of your selection.	1+2	OR	What is MAN? Write down its two characteristics.	1+2															
(iii)	Write two comparison points between 'volatile' and non-volatile' memories with one example each.	03	OR	Why is ' <b>Cache</b> ' memory used? (Give three reasons.)	03															
(iv)	Complete the following table for the following types of instructions: <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Instruction Type</th> <th style="text-align: center;">Number of operands</th> <th style="text-align: center;">Example</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Zero-address</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">One-address</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">Two-address</td> <td></td> <td></td> </tr> </tbody> </table>	Instruction Type	Number of operands	Example	Zero-address			One-address			Two-address			03	OR	Draw an ER Diagram that shows cardinality and modality for the following situation: Each student may be registered for one or more courses. A course may have at least one student registered or have several students registered.	03			
Instruction Type	Number of operands	Example																		
Zero-address																				
One-address																				
Two-address																				
(v)	What is system bus? Write down the purpose of data bus.	1+2	OR	How is Form useful in database? Give three reasons	03															
(vi)	What is the purpose of an expansion slot? Identify the most efficient expansion slot as well.	2+1	OR	How is a Super computer different from Microcomputer? Justify with three reasons.	03															
(vii)	Which expansion card is required to connect to the internet? Give reasons of using this card.	1+2	OR	What is query? Enlist names of four queries.	1+2															
(viii)	Compare <b>Half-duplex</b> and <b>Full-duplex</b> communication modes. (Any three points)	03	OR	Enlist three factors that affect the processing speed of a computer system.	03															
(ix)	Compare Mesh and Bus network topologies in terms of architecture, reliability and expansion.	1x3	OR	Enlist any three roles of Database administrator.	03															
(x)	What is WML? Write down its two features.	1+2	OR	Why is LCD better than CRT monitor? Justify your answer with three reasons.	03															
(xi)	State any three tasks of Data Manipulation Language.	03	OR	Differentiate between Client-Server and Peer-to-Peer network architectures. (Any three points)	03															
(xii)	What is control unit? List down three main components of control unit.	03	OR	Compare 'field' and 'record' with one example of each.	03															
(xiii)	Identify the Primary key in the given MS-Access table, also mention suitable data type for any <b>four</b> fields: <table border="1" style="margin: 5px auto; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Book ID</th> <th style="text-align: center;">Title</th> <th style="text-align: center;">Available</th> <th style="text-align: center;">Publish Date</th> <th style="text-align: center;">Price</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">7110</td> <td style="text-align: center;">Python</td> <td style="text-align: center;">No</td> <td style="text-align: center;">26/12/21</td> <td style="text-align: center;">550</td> </tr> <tr> <td style="text-align: center;">7111</td> <td style="text-align: center;">Oracle</td> <td style="text-align: center;">Yes</td> <td style="text-align: center;">22/01/23</td> <td style="text-align: center;">660</td> </tr> </tbody> </table>	Book ID	Title	Available	Publish Date	Price	7110	Python	No	26/12/21	550	7111	Oracle	Yes	22/01/23	660	1+2	OR	What is Program control instruction? Give an example as well.	2+1
Book ID	Title	Available	Publish Date	Price																
7110	Python	No	26/12/21	550																
7111	Oracle	Yes	22/01/23	660																
(xiv)	What is report? Enlist any two report layouts.	1+2	OR	Is <b>BIOS</b> hardware or software? How is it helpful in performance of the computer system?	1+2															

## SECTION – C (Marks 20)

**Attempt the following questions.**

**(4 x 5 = 20)**

Q.3	What is an application software? Explain any two types of application software with one example each.	1+2+2	OR	Why is wireless communication more popular? Give five reasons.	1x5
Q.4	What is an optical disk? Describe its working mechanism with an advantage.	2+3	OR	What is the purpose of OSI model? Explain the functions of Transport layer and Application layer.	1+2+2
Q.5	What is register? Differentiate between any <b>TWO</b> examples of Special-purpose registers.	1+4	OR	What are Pointing input devices? Explain the purpose and application of any <b>TWO</b> devices.	1+4
Q.6	What is database model? How is Hierarchical database model different from Network database model? Give at least <b>four</b> reasons.	1+4	OR	What is a Port? How are USB and HDMI ports helpful for the working of computer system?	1+2+2