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HSSC-I NATIONAL BOOK FOUNDATION FBISE

COMPUTER TEST - CHAPTER 1: COMPUTER SYSTEMS

Name:		Roll No.		Section:

Total Time: 2:30 Hour
Time Allowed: 150 Minutes

Total Marks: 150

PAPER OBJECTIVE
SECTION-A (MARKS 150)

NOTE: Section-A is compulsory. All parts of this section are to be answered on these pages and handed over to the center superintendent. Deleting / overwriting is not allowed. Do not use lead pencil.

Q.1 Fill the relevant bubble for each part. All parts carry one mark.

Questions	A	B	C	D	A B C D
1. A digital computer works internally on which number system?	Octal	Decimal	Hexadecimal	Binary	○○○●
2. An electronic switch has how many states?	Two	Three	One	Four	●○○○
3. A binary digit (0 or 1) is referred to as a:	Bit	Word	Nibble	Byte	●○○○
4. Codes that represent numbers, letters and special characters are called:	Error codes	Source codes	Numeric codes only	Alphanumeric codes	○○○●
5. ASCII uses 7 bits to represent a total of how many characters?	128	512	256	64	●○○○
6. In the book's example, logic 0 might be any voltage between:	+2 V and +5 V	+5 V and +12 V	0 V and +0.8 V	-5 V and 0 V	○○●○
7. In the book's example, logic 1 might range from:	-5 V to -2 V	+2 V to +5 V	0 V to +0.8 V	+10 V to +12 V	○●○○
8. Which signals are continuous and vary smoothly over time?	Binary signals	Discrete signals	Digital signals	Analog signals	○○○●
9. Which of the following is an example of a digital signal?	VHS tape	Digital image (JPEG)	Analog cassette tape	Human speech	○●○○
10. Which type of signal is prone to quality loss during copying or storage?	Discrete	Digital	Binary	Analog	○○○●
11. Compared with digital signals, analog signals are:	Easily copied without loss	Always binary	Susceptible to noise	Free from noise	○○●○
12. Logic gates are the building blocks of:	Operating systems	Analog circuits	Digital circuits	Spreadsheets	○○●○

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Questions	A	B	C	D	A B C D
13. Which gate produces output 1 only when its two inputs are at different logic levels?	XOR	AND	OR	NOR	●○○○
14. A truth table shows:	Only the cost of a circuit	Speed of a circuit	Output for all possible input combinations	Power use of a circuit	○○●○
15. In a truth table, the output is shown in the:	Right-most column	Top row only	Middle column	Left-most column	●○○○
16. A + A = A is known as the:	Associative law	Idempotent law (OR)	Absorption law	Distributive law	○●○○
17. A . A = A is known as the:	Associative law (OR)	Idempotent law (AND)	Negation law	Absorption law (OR)	○●○○
18. (A + B) + C = A + (B + C) represents the:	Idempotent law	Absorption law	Distributive law	Associative law (OR)	○○○●
19. A Boolean function is formed using binary variables, logical operators, parentheses and an:	Arrow	Colon	Equal sign	Semicolon	○○●○
20. For F = x + y, the function equals 0 when:	x = 1 and y = 0	x = 0 and y = 1	x = 0 and y = 0	x = 1 and y = 1	○○●○
21. Converting F2 = x + y'z needs one AND gate, one OR gate and how many NOT gates?	Three	Zero	One	Two	○○●○
22. The Karnaugh map was introduced by Maurice Karnaugh in:	1943	1973	1953	1963	○○●○
23. A three-variable K-map contains how many cells?	8	6	4	16	●○○○
24. In a K-map, the complement of a variable is also called:	Prefix	Prime	Index	Postfix	○●○○
25. In a three-variable K-map, groups can overlap and:	Be diagonal	Wrap around the sides	Never touch the edges	Contain 0s	○●○○
26. The dual of the expression 0 . A = 0 is:	1 + A = 1	A + A = A	1 . A = 1	0 + A = 0	●○○○
27. Flip-flops and latches built using logic gates are used in:	Memory circuits	Scanners	Printers	Monitors	●○○○
28. A device used for building temporary circuits is called a:	Oscilloscope	Soldering iron	Breadboard	Motherboard	○○●○
29. In the breadboard practical, the NPN transistor acts as a(n):	Memory cell	Display	Electronic switch	Power source	○○●○

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Questions	A	B	C	D	A B C D
30. The AND gate gives output 1 only when:	Any input is 1	All inputs are 0	All inputs are 1	Inputs differ	○○●○
31. The NOT gate is also called a(n):	Adder	Selector	Counter	Inverter	○○○●
32. A NOT gate has how many inputs?	One	Three	Four	Two	●○○○
33. The output of a NOR gate is 1 only when:	Any input is 1	All inputs are 0	Inputs differ	All inputs are 1	○●○○
34. The output of a NOT gate for input 1 is:	1	2	10	0	○○○●
35. An OR gate with inputs 1 and 0 gives output:	0	Undefined	1	10	○○●○
36. A NOR gate is equivalent to an OR gate followed by a:	XOR gate	AND gate	NOT gate	Buffer	○○●○
37. SDLC stands for:	System Data Logic Control	Software Development Life Cycle	Software Design Language Code	Structured Data Life Cycle	○●○○
38. In IT, the term "life cycle" was first used in the:	1950s	1980s	1960s	1970s	●○○○
39. Which is the first phase of SDLC in the book's list?	Defining the problem	Testing	Deployment	Maintenance	●○○○
40. In which phase are the project's goals identified and resources like personnel and costs assessed?	Testing phase	Maintenance phase	Documentation phase	Planning phase	○○○●
41. Which feasibility checks whether the required hardware, software and tools are available?	Economic feasibility	Schedule feasibility	Legal feasibility	Technical feasibility	○○○●
42. Which feasibility compares the costs and benefits of a proposed system?	Legal feasibility	Technical feasibility	Economic feasibility	Operational feasibility	○○●○
43. Which feasibility checks compliance with applicable laws and regulations?	Schedule feasibility	Legal feasibility	Technical feasibility	Economic feasibility	○●○○
44. Which feasibility checks whether a system can be completed within a specified timeframe?	Legal feasibility	Schedule feasibility	Operational feasibility	Technical feasibility	○●○○
45. Which of the following is a step of requirement engineering?	Requirements deletion	Requirements validation	Code compilation	Hardware installation	○●○○

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Questions	A	B	C	D	A B C D
46. Direct conversations with stakeholders to gather requirements are called:	Document analysis	Surveys	Observation	Interviews	○○○●
47. Distributing questionnaires to many stakeholders is the requirement gathering method called:	Surveys and questionnaires	Observation	Interviews	Document analysis	●○○○
48. Reviewing existing reports and manuals to gather requirements is called:	Interviews	Document analysis	Surveys	Observation	○●○○
49. Requirements validation ensures that gathered requirements:	Are deleted after testing	Align with stakeholders' intentions	Are written in code	Are hidden from users	○●○○
50. UML stands for:	Unified Memory Layout	Unique Model Logic	Unified Modeling Language	Universal Machine Language	○○●○
51. The design phase normally consists of which two simple structures?	Algorithms and flowcharts	Loops and arrays	Tables and queries	Compilers and interpreters	●○○○
52. A diagrammatic representation of an algorithm is called a:	Database	Truth table	Flowchart	Spreadsheet	○○●○
53. In a flowchart, the terminal symbol indicates the:	Input or output	Connection	Start or end of a program	Decision	○○●○
54. In a flowchart, the parallelogram is used for:	Input/Output operations	Arithmetic operations	Connecting parts	Decisions	●○○○
55. In a flowchart, the diamond symbol is used for:	Start	Connecting lines	Decisions (Yes/No)	Output only	○○●○
56. In a flowchart, arrows (flow lines) show the:	Type of output	Direction of flow	Value of variables	Size of memory	○●○○
57. In the development/coding phase, developers:	Translate design plans into code	Write the feasibility report	Replace the old system	Interview users	●○○○
58. Errors in a program are commonly known as:	Bugs	Packets	Bits	Nodes	●○○○
59. In black box testing, the tester:	Designs the hardware	Knows the entire source code	Does not know the internal code	Writes the source code	○○●○
60. In white box testing, the tester:	Tests only the hardware	Tests only the user manual	Knows the internal code and logic	Does not see any code	○○●○
61. The process of changing from the old system to the new one is called:	Debugging	Conversion	Validation	Analysis	○●○○
62. In the direct method of deployment:	The system is introduced gradually	Both systems run together	A small group tests the system	The old system is entirely replaced at once	○○○●

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Questions	A	B	C	D	A B C D
63. In the pilot method of deployment, the new system is first used by:	Only developers	No users	All users	A small user group	○○○●
64. In the phased method of deployment, the new system is:	Introduced gradually	Tested only by the vendor	Introduced all at once	Never used	●○○○
65. Documentation in SDLC is important for:	Diagnosing errors and making changes	Replacing hardware	Designing logic gates	Training animals	●○○○
66. System maintenance in SDLC is:	An ongoing process	Done before planning	Not required	A one-time activity	●○○○
67. The waterfall model is suitable when requirements are:	Constantly changing	Not documented	Well-defined	Unknown	○○●○
68. SRS stands for:	Structured Review Summary	Software Requirement Specification	Software Resource Sheet	System Run Schedule	○●○○
69. SDD stands for:	Software Data Disk	Software Design Document	Structured Design Data	System Domain Draft	○●○○
70. Perfective maintenance involves:	Deleting old data	Enhancing the functionality of the software	Fixing hardware faults	Writing the SRS	○●○○
71. A major disadvantage of the waterfall model is:	Inflexibility to changes	Well-documented processes	Easy to understand	Clearly defined phases	●○○○
72. The Agile model is based on which approach?	Random	One-step	Linear only	Iterative and incremental	○○○●
73. In Agile, short planning and development cycles are called:	Waterfalls	Batches	Loops	Sprints	○○○●
74. In Agile, testing is:	Done before design	Continuous and parallel with development	Done only at the end	Skipped	○●○○
75. A disadvantage of the Agile model is:	No customer involvement	Limited emphasis on documentation	Late delivery only	Rigid planning	○●○○
76. An advantage of the Agile model is:	No customer feedback	Single delivery	Fixed requirements	Flexibility and adaptability	○○○●
77. Network topology is the:	Systematic arrangement of computers and devices in a network	Speed of a network	Cost of a network	Name of a network	●○○○
78. Network devices are called:	Nodes	Tokens	Frames	Packets	●○○○
79. The two approaches to network topology are:	Physical and logical	Wired and wireless only	Local and remote	Digital and analog	●○○○

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Questions	A	B	C	D	A B C D
80. In a bus topology, all devices are connected to:	A central hub	Every other node	A ring of tokens	One cable	○○○●
81. Ethernet is commonly used in which topology?	Tree	Bus	Hybrid	Mesh	○●○○
82. A disadvantage of bus topology is that all nodes:	Use separate cables	Share the same bandwidth	Need a switch	Have dedicated links	○●○○
83. In a bus topology, a damaged main cable:	Affects only one node	Has no effect	Speeds up the network	Affects the entire network	○○○●
84. If the central hub or switch of a star topology fails:	Nothing happens	The entire network is affected	Only one node fails	The network speeds up	○●○○
85. A powerful computer that provides services, resources or data to other devices is a:	Client	Node only	Cable	Server	○○○●
86. In a mesh topology, every node is connected to:	Only two nodes	All other nodes	Only one hub	A single cable	○●○○
87. Mesh topology is often used in:	Single-user devices	Home calculators	Corporate networks and military applications	Printers only	○○●○
88. Another name for tree topology is:	Circular topology	Hierarchical topology	Linear topology	Random topology	○●○○
89. Tree topology is similar to star topology but uses:	A single cable	Multiple hubs or switches	A token	A ring	○●○○
90. In a ring topology, data travels around the ring in:	Both directions always	No direction	One direction	Random directions	○○●○
91. FDDI stands for:	Fast Digital Data Input	File Data Distribution Interface	Fiber Distributed Data Interface	Fiber Data Direct Internet	○○●○
92. FDDI networks are also called:	Single bus network	Mesh network	Star network	Dual ring network	○○○●
93. Hybrid topology combines elements of:	Only ring	Star, tree, ring and bus	Only mesh	Only star and bus	○●○○
94. In a star topology, the central hub capacity can become a:	Protocol	Type of cable	Bottleneck as the network grows	Source of power	○○●○
95. Which topology is described as not highly scalable because signals degrade along the bus?	Hybrid	Mesh	Star	Bus	○○○●

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Questions	A	B	C	D	A B C D
96. Large data centers and cloud networks often use which topology?	Ring	Mesh	Tree	Bus	○●○○
97. Load testing evaluates network performance under:	Power failure	No traffic	Low voltage	Heavy traffic conditions	○○○●
98. Comparing network performance against industry standards is called:	Benchmarking	Stress testing	Debugging	Fault injection	●○○○
99. Adding more instances to a network is called:	Vertical scalability	Horizontal scalability	Benchmarking	Fault tolerance	○●○○
100. Verifying that a network keeps working when components fail is called:	Load testing	Fault tolerance testing	Benchmarking	Stress testing	○●○○
101. Cloud computing provides access to computing resources over the:	Internet	Printer	Telephone line only	Memory card	●○○○
102. Quickly scaling cloud resources up or down is called:	Broad network access	Measured service	Rapid elasticity	Resource pooling	○○●○
103. In cloud computing, usage is monitored and billed based on actual usage. This is called:	Broad network access	Rapid elasticity	Resource pooling	Measured service	○○○●
104. IaaS stands for:	Infrastructure as a Service	Interface as a Service	Information as a System	Internet as a Service	●○○○
105. Which service model offers a platform with tools for application development?	SaaS	NaaS	IaaS	PaaS	○○○●
106. Cloud resources used exclusively by a single organization form a:	Community cloud	Public cloud	Hybrid cloud	Private cloud	○○○●
107. A cloud that combines public and private clouds is a:	Public cloud	Hybrid cloud	Community cloud	Private cloud	○●○○
108. AWS stands for:	Automatic Web Server	Advanced Web System	Amazon Web Services	Amazon Wide Storage	○○●○
109. Scaling out means:	Increasing the number of servers	Removing servers	Reducing traffic	Adding RAM to one server	●○○○
110. Scaling up means:	Adding more servers	Deleting data	Disabling the network	Adding more resources such as CPU and RAM to one server	○○○●
111. Cybersecurity is the protection of internet-connected systems and data from:	Malicious attacks	Power cuts	Hardware upgrades	Software updates	●○○○
112. Cybersecurity is also known as:	Data entry	Network cabling	Information technology security	System formatting	○○●○

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Questions	A	B	C	D	A B C D
113. Protecting personal, financial and intellectual property data from theft is called protecting:	Deleted data	Public data	Sensitive data	Old data	○○●○
114. Which of the following is a cyber-attack mentioned in the book?	Compilation	Phishing	Defragmentation	Scanning	○●○○
115. Power grids and transportation systems are examples of:	Critical infrastructure	Cloud storage	Application software	Social media	●○○○
116. Failure to comply with data protection regulations can result in:	New hardware	Faster internet	Free software	Significant fines and legal action	○○○●
117. Cybersecurity threats are harmful acts performed with:	Charitable intent	Educational intent	No intent	Destructive intent	○○○●
118. Malware is software specifically designed to:	Harm or exploit computer systems	Speed up a computer	Clean a disk	Draw graphics	●○○○
119. A virus is malicious code that:	Attaches itself to legitimate programs	Cleans files	Is always visible	Spreads only by hardware	●○○○
120. Which malware is self-replicating and spreads across networks without user intervention?	Worm	Adware	Spyware	Virus	●○○○
121. Malware that encrypts files and demands a ransom is called:	Ransomware	Trojan	Spyware	Worm	●○○○
122. Software that collects user information without their knowledge is:	Browser	Spyware	Antivirus	Firewall	○●○○
123. Phishing is a:	Hardware fault	Backup method	Programming language	Social engineering attack	○○○●
124. Targeted phishing aimed at specific individuals or organizations is called:	DoS	Email phishing	Spyware	Spear phishing	○○○●
125. In a DoS attack, the target is flooded by:	A single attacker	The firewall	Multiple compromised devices	The user	●○○○
126. DoS and DDoS attacks aim to make a system:	More secure	Faster	Cheaper	Inaccessible to legitimate users	○○○●
127. Insider threats come from:	Only viruses	Only firewalls	Only foreign hackers	Employees, contractors or partners misusing access	○○○●
128. Paying the ransom to attackers:	Removes malware	Is legally required	Does not guarantee data recovery	Always recovers data	○○●○
129. A strong password should usually be at least how many characters long?	4	6	12	8	○○●○

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Questions	A	B	C	D	A B C D
130. A strong password contains a mix of:	Uppercase, lowercase, numbers and special characters	Only the user's name	Only lowercase letters	Only digits	●○○○
131. Updating software helps to:	Remove the firewall	Patch known vulnerabilities	Delete files	Slow the computer	○●○○
132. 2FA requires users to provide:	Two different forms of verification	Two passwords of the same type	Two usernames	Two computers	●○○○
133. OTP stands for:	Optional token pin	One-time password	Online transfer process	Open text protocol	○●○○
134. Authentication is the process of:	Compressing data	Deleting accounts	Encrypting files	Verifying the identity of a user or system	○○○●
135. A firewall monitors and controls:	Only keyboard input	Only video files	Incoming and outgoing network traffic	Only printer jobs	○○●○
136. Antivirus software is designed to:	Detect, quarantine and remove malicious software	Speed up the internet	Create viruses	Format the disk	●○○○
137. Encryption transforms plaintext into:	Source code	A spreadsheet	Cipher text	A flowchart	○○●○
138. The primary aim of data encryption is:	Faster printing	Better graphics	Data confidentiality	Bigger storage	○○●○
139. Regular backups help organizations recover from ransomware without:	Using electricity	Paying ransoms	Using networks	Using computers	○●○○
140. Cryptography is the scientific approach of securing information using:	Mathematical algorithms	Paper records	Random guesses	Hardware only	●○○○
141. A piece of information that controls the transformation of plaintext into cipher text is the:	Firewall	Cable	Browser	Encryption key	○○○●
142. The security of encryption depends on the strength of the:	Printer	Monitor	Mouse	Key	○○○●
143. The two types of encryption algorithms are:	Public and open	Digital and analog	Static and dynamic	Symmetric and asymmetric	○○○●
144. Symmetric encryption uses:	Two different keys	A single key for encryption and decryption	No key	A new key for each letter	○●○○
145. A major challenge of symmetric encryption is:	Slow speed	No security	Using two keys	Key distribution	○○○●

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Questions	A	B	C	D	A B C D
146. In asymmetric encryption, the public key is used to:	Compress data	Delete data	Encrypt data	Decrypt data	○○●○
147. In asymmetric encryption, the private key is used to:	Delete keys	Share openly	Encrypt only	Decrypt data	○○○●
148. Which encryption is generally faster and suited for large amounts of data?	Neither	Asymmetric	Symmetric	Both are equally slow	○○●○
149. Which encryption is computationally more complex and slower?	Neither	Asymmetric	Symmetric	Both are identical	○●○○
150. Non-refutation means that the sender:	Can deny sending the message	Has no key	Cannot deny sending the message	Is unknown	○○●○