



Admas University
Mekanisa Campus
Faculty of Informatics
Department of Computer Science
Model Exit Exam VII CODE MK-007



				SENE, 2015 Time allotted: 1:40 Hrs
S.N	Theme	Course Title	Credit Hrs.	
1	Theme 1. System Development	Software Engineering	3	6
		Web Programming	6	9
		Database Systems	6	12
Total		3	15	27
2	Theme 2. Programming and Algorithms	Computer Programming	6	6
		Object Oriented Programming	3	6
		Design and Analysis of Algorithms	3	6
		Data Structure and Algorithms	3	7
Total		4	15	25
3	Theme 3. Computer Networking and Security	Data Communication and Computer Networking	3	6
		Computer Security	3	6
		Network and System Administration	3	6
Total		3	9	18
4	Theme 4. Intelligent Systems	Introduction to Artificial Intelligence	3	6
		1	3	6
5	Theme 5. Computer Architecture and Operating Systems	Operating System	3	6
		Computer organization and architecture	3	6
Total		2	6	12
6	Theme 6. Compiler and Complexity	Formal Language and Complexity Theory	3	6
		Compiler Design	3	6
		2	6	12
Grand total		12	51	100

Name _____

ID.No. _____

Model Exit Exam Computer Science

Instruction: Read the questions and choose the right answer from the given alternatives and write the letter of your choice on the space provided at the separate answer sheet. (1 point each)

Theme 1: System Development

Software Engineering

1. Which of the following is not a step of requirement engineering
 - A. Requirement Elicitation
 - B. Requirement Analysis
 - C. Requirement Design
 - D. Requirement Documentation
2. Characteristics of good SRS include all except
 - A. Completeness
 - B. Dependence
 - C. Design
 - D. modifiability
3. When you checked whether a components of a system work together or not is consider as:
 - A. System test
 - B. Integration test
 - C. Acceptance test
 - D. Unit test
4. Which of the following is true about the Layered approach?
 - A. Decrease levels of abstraction during design
 - B. Support reuse and enhancement
 - C. Performance may decrease
 - D. Hard to maintain
5. The document which produced during requirement specification is called
 - A. SRS
 - B. Software requirement specification
 - C. System requirement specification
 - D. All
6. Which one of the following requirements is not nonfunctional requirement
 - A. Performance
 - B. Cultural and political
 - C. Security

D. taking user input



Web Programming

7. Internet service that allows individuals and organizations to make their website accessible is ____.
- A. WWW
 - B. FTP
 - C. Web hosting
 - D. Data Center
8. A generic protocol that supports client requesting a document from the server and server returning the requested documents is called ____.
- A. DNS
 - B. TCP
 - C. HTTP
 - D. Telnet
9. How can you make a bulleted list?
- A. <list>
 - B. <dl>
 - C.
 - D.
10. What is the correct HTML for making a drop-down list?
- A. <select>
 - B. <input type="dropdown">
 - C. <input type="list">
 - D. <list>
11. What is the correct HTML for making a text area?
- A. <input type="textarea">
 - B. <input type="textbox">
 - C. <textarea>
 - D. <input text="textbox">
12. What is the correct HTML for creating a hyperlink?
- A. adms
 - B. admas.edu
 - C. <a>http://www. AdU .edu
 - D. admas .edu
13. A method used in PHP to encrypt data for security?
- A. get()
 - B. md5()
 - C. post()
 - D. array()
14. Which function can be used to retrieve the values of the database

- A. mysqli_connect()
 - B. mysqli_num_rows()
 - C. mysqli_fetch_assoc()
 - D. mysqli_query
15. How can we create new file in PHP
- A. fopen()
 - B. fread()
 - C. fwrite()
 - D. fappend()

Database systems

16. Which of the following is not a level of data abstraction?
- A. Physical Level
 - B. Logical Level
 - C. View Level
 - D. Critical Level
17. Which of the following provides the ability to query information from the database and insert tuples into, delete tuples from, and modify tuples in the database?
- A. DML(Data Manipulation Language)
 - B. DDL(Data Definition Language)
 - C. Query
 - D. Relational Schema
18. Which of the following represents a relationship among a set of values?
- A. A Table
 - B. A Field
 - C. A Row
 - D. A Column
 - E. Foreign key
19. In SQL, which command(s) is(are) used to enable/disable a database trigger?

- A. ALTER DATABASE
 - B. ALTER TABLE
 - C. MODIFY TRIGGER
 - D. ALTER TRIGGER
20. A relation that has no partial dependencies is in which normal form
- A. First normal form
 - B. Second normal form
 - C. Third normal form
 - D. BCNF
21. Which of the following is not binary operation?
- A. Union
 - B. Project
 - C. Set Difference
 - D. Cartesian Product
22. **What does ACID stand for in the context of DBMS transactions?**
- A. Atomicity, Consistency, Isolation, and Durability
 - B. Analysis Console for Intrusion Databases
 - C. Atomicity, Consistency, Isolation, and Data
 - D. Advanced Computing Information Database
23. One of the following cannot be resolved by concurrency control techniques
- A. Read-Write conflict
 - B. Read-Read conflict
 - C. Write –Write conflict
 - D. Write-Read conflict
24. A query typically has many possible execution strategies, and the process of choosing a suitable one for query processing is

- A. Query optimization
 - B. Query tree
 - C. Transaction management
 - D. Serializability
25. Enforcing serializability in concurrent schedules ensures which two of the four desired properties for transactions?
- A. Atomicity and isolation
 - B. Atomicity and durability
 - C. Atomicity and consistency
 - D. Consistency and isolation
26. Which property is guaranteed by the two-phase locking protocol?
- A. serial schedules
 - B. serializable schedules
 - C. recoverable schedules
 - D. avoiding cascading rollback
27. Which type of lock still allows other transactions to have read-only access to the locked resource?
- A. two-phased lock
 - B. exclusive lock
 - C. explicit lock
 - D. shared lock

Computer Programming

28. Which of the following are not legal function declarations?
- A. `int ave3(int a, int b, int c);`
 - B. `int 3ave(int a, int b, int c);`
 - C. `int ave3(int, int, int);`
 - D. `int ave_3(int a1, int a2, int a3);`

29. Which include directive is necessary for file IO

- A. #include <fstream>
- B. #include <iomanip>
- C. #include <cstdlib>
- D. #include <fileIO>

30. What is the error of the following for loop?
for (int i=10; i> 0; i)
cout<< " " <<i;

- A. Omission of semicolon after the end of the first line
- B. Brace should be opened and must be closed before and after the cout statement
- C. The cout statement is empty string so that nothing to display
- D. The for loop counter remain unchanged so that unable to loop

31. A valid identifier is consists of all of the following, **except**

- A. Letters
- B. digits
- C. underscore characters
- D. Keywords

32. Given that p1 is a pointer variable of the string class, which of the following are not legal statements?

- A. p1 = new int;
- B. cout<< *p1;
- C. p1 = new char[10];
- D. *p1 = new string;

33. Given that p1 is an integer pointer variable, and a1 is an integer array, which of the following statements are not legal code?

- A. p1= a1;
- B. cout<< p1[0];
- C. cin>> p1[0];
- D. a1 = p1;

Object Oriented Programming

34. The keyword used to create subclass/derived class in inheritance is_____

- A. extend

- B. implements
 - C. extends
 - D. implement
35. When does method overloading is determined?
- A. At run time
 - B. At compile time
 - C. At coding time
 - D. At execution time
36. Which of the following is **not** true?
- A. Java support multiple inheritance through interface
 - B. By default all methods declared in interface are abstract
 - C. A class can implement many interfaces
 - D. A keyword used to declare an interface is “class”
37. Which one of the following is true?
- A. Constructors have a return type
 - B. Constructors have the same name with the class name
 - C. Constructors needs to invoke explicitly for execution
 - D. Constructors have the same function with methods
38. A _____ member function can be called using the class name.
- A. Class Methods
 - B. Static Methods
 - C. Instance Methods
 - D. Interface Methods
39. Which concept of Java is achieved by combining methods and attribute into a class?
- A. Encapsulation
 - B. Inheritance
 - C. Polymorphism
 - D. Abstraction

Design and Analysis of Algorithms

40. _____ Measures the upper bound of time complexity.
- A. Omega
 - B. Big Oh
 - C. Theta
 - D. All
41. _____ of an algorithm refers to defining the mathematical bound/framing of its run-time performance?
- A. Space complexity
 - B. Time complexity

- C. Asymptotic analysis
 - D. none of the above
42. Which one of the following algorithms is based on divide and conquers approach?
- A. Multistage Graph
 - B. Merge sort
 - C. Shortest Path
 - D. Chess playing algorithm
43. What is the complexity of Quick sort algorithm?
- A. $n \log n$
 - B. $\log n$
 - C. Polynomial
 - D. Quadratic
44. The solution to a given optimization problem can be obtained by the combination of optimal solutions to its sub-problems. This property is called _____
- A. Optimal sub structure
 - B. Recursive
 - C. Non overlapping
 - D. None Recursive
45. _____ algorithm traverses a graph in a Breadth-ward motion and uses a queue to remember to get the next vertex to start a search, when a dead end occurs in any iteration.
- A. Breadth first search
 - B. Binary search
 - C. Depth first search
 - D. Beam Search

Data Structure and Algorithms

46. Which one of the following is non-linear data structure?
- A. Tree
 - B. Stack
 - C. Queue
 - D. Linked list
47. In _____ traversal method, the root node is visited first, then the left sub tree and finally the right sub tree.
- A. In-Order
 - B. Post-Order
 - C. Pre-Order
 - D. Bi- Order
48. The sequence of computational steps to solve a problem is called _____
- A. Data Structure
 - B. Algorithms
 - C. Information
 - D. Data Processing
49. Which one is true about binary tree?
- A. Every node has a key and no two elements have the same key.
 - B. The keys in the right subtree are larger than the keys in the root.

- C. The keys in the left subtree are smaller than the keys in the root.
 - D. All
50. While searching from binary tree, how can the index should go?
- A. If the searched key is less than the root, go to right.
 - B. If the searched key is larger than the root, go to left.
 - C. If the searched key is equal to the root, go to left.
 - D. If the searched key is greater the root, go to right.
51. The initial configuration of the queue is having the elements 'B, C, D, A' forming a queue. To get the new configuration 'A, D, C, B' one needs a minimum of:
- A. 3 enqueue and 4 dequeue operations
 - B. 3 dequeue and 4enqueue operations
 - C. 3 dequeue and 2 enqueue operations
 - D. 3 dequeue and 3enqueue operations
52. The postfix form of $A*B+C/D$ is?
- A. $*AB/CD+$
 - B. $AB*CD/+$
 - C. $A*BC+/D$
 - D. $ABCD+/*$

Data Communication and Computer Networks

53. Network Performance **do not** depend on
- A. Number of users
 - B. Hardware
 - C. Types of transmission medium
 - D. Types of users
54. There are two types of network topologies from these which one defines how hosts access the media to send data
- A. Star Topology
 - B. Bus Topology
 - C. Logical Topology
 - D. Physical Topology
55. Which layer 1 device can be used to enlarge the area covered by a single LAN segment?
- A. Switch
 - B. NIC
 - C. Hub
 - D. transceiver
56. Segmentation of a data stream happens at which layer of the OSI model?
- A. Physical
 - B. Data Link
 - C. Network
 - D. Transport

57. You want to implement a network medium that is not susceptible to EMI. Which type of cabling should you use?
- A. coaxial
 - B. Microwave
 - C. Category 6 UTP
 - D. Fiber-optic
58. Which of the following describe router functions?
- A. Collision prevention
 - B. Broadcast forwarding
 - C. Broadcast domain enlargement
 - D. Path selection

Network and System Administration

59. An Active Directory container used to organize a network's users and resources into logical administrative units?
- A. Users Units
 - B. Organizational Units
 - C. Container object
 - D. Leaf object
60. Which Linux command is used to create a new file?
- A. create
 - B. file
 - C. tch
 - D. touch
61. Which command creates a new shell?
- A. ah
 - B. oh
 - C. ch
 - D. sh
62. control user's access to network resources through changes is the main responsibility of
- A. Accounting management
 - B. Security management
 - C. Reconfigured fault management
 - D. Reactive fault management

63. You want to monitor the CPU, memory, and disk usage on your computer to ensure that there are no bottlenecks. Which MMC snap – in would you load to access System Monitor?
- A. System Monitor
 - B. Reliability Monitor
 - C. ActiveX Control
 - D. Performance Logs and Alerts
64. You have a DNS server that contains corrupt information. You fix the problem with the DNS server, but one of your users is complaining that they are still unable to access Internet resources. You verify that everything works on another computer on the same subnet. Which command can you use to fix the problem?
- A. IPCONFIG /flush
 - B. IPCONFIG /flushdns
 - C. PING /flush
 - D. GROPE /flushdns

Computer Security

65. In the CIA Triad, which one of the following is not involved?
- A. Availability
 - B. Confidentiality
 - C. Authenticity
 - D. Integrity
66. Which of the following is a type of malware that disguises itself as a legitimate program to trick the user into downloading and installing it?
- A. Trojan
 - B. Worm
 - C. Virus
 - D. Adware
67. What is the process of verifying the identity of a user or system before allowing access to resources?
- A. Authorization
 - B. Authentication

- C. Encryption
 - D. Decryption
68. Existence of a weakness, design or implementation error that can lead to an unexpected, undesirable event compromising the security of a system
- A. Risk
 - B. Threat
 - C. Vulnerability
 - D. Exploit
69. A protocol that relies on TCP connections to provide authentication, authorization and accounting is: -
- A. RADIUS
 - B. TACACS+
 - C. HTTPS
 - D. HTTP
70. The science of encryption and decryption that encompasses two disciplines is:
- A. Cryptography
 - B. Cryptanalysis
 - C. Cryptology
 - D. Steganography

Introduction to artificial Intelligence

71. What is artificial intelligence?
- A. Putting intelligence of humans into computers
 - B. Programming with our own intelligence
 - C. Playing games
 - D. Putting more memory into machines
72. Searching in a state space by agent involves the following **except**
- A. Searching down the search space until it finds the goal node
 - B. Expanding the child node of the current node
 - C. Revisiting the previous explored nodes
 - D. Making goal test on every current node
73. An agent is anything that can acts upon that environment through
- A. Sensor
 - B. Effectors

- C. Goal
D. States
74. A subset of Artificial Intelligence (AI) which provides machines the ability to learn automatically & improve from experience without being explicitly programmed to do so is called_____.
- A. Machine Learning
B. Artificial intelligence
C. Deep learning
D. Robotics
75. A set of rules and statistical techniques used to learn patterns from data and draw significant information is _____.
- A. Model
B. Algorithm
C. Predicator variable
D. Response Variable
76. A machine can learn to solve a problem by using any one of the following approaches except
- A. Supervised learning
B. Unsupervised learning
C. Semi-supervised learning
D. Innate learning

Computer Organization and Architecture

77. Which pair of universal gates can implement any Boolean function without need to use any other gate type.
- A. NAND and OR
B. NOR and NAND
C. XOR and NOT
D. OR and NOT
78. Which of the following circuit is used to store one bit of data?
- A. Decoder
B. Encoder

- C. Flip Flop
D. Register
79. In digital computers subtraction is carried out by -
A. 10's complement
B. 1's complement
C. 2's complement
D. 9's complement
80. Which of the following is a combinational logic circuit which sends data from a single source to two or more separate destinations?
A. Decoder
B. Multiplexer
C. Demultiplexer
D. Encoder
81. Which process is used to map logical addresses of variable length onto physical memory?
A. Paging
B. Overlays
C. Segmentation
D. Paging with segmentation
82. A combinational logic circuit which converts binary information from n coded inputs to a maximum of 2^n unique outputs is termed as _____
A. Multiplexer
B. Demultiplexer
C. Encoder
D. Decoder

Operating System

83. From items lists below, which one is the address generated by CPU?
A. physical address
B. logical address
C. absolute address

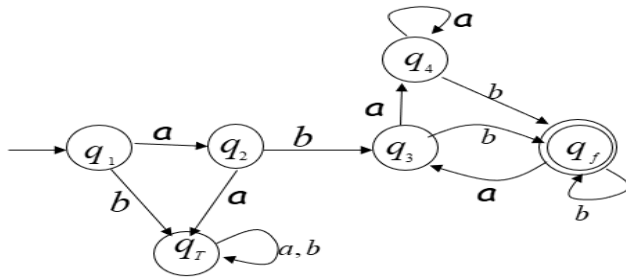
- D. Static address
84. From the list below, which algorithm is defined in Time quantum?
- A. shortest job scheduling algorithm
 - B. priority scheduling algorithm
 - C. round robin scheduling algorithm
 - D. multilevel queue scheduling algorithm
85. From the Scheduling Algorithms Listed Below, Which scheduling algorithm allocates the CPU first to the process that requests the CPU first?
- A. round robin scheduling algorithm
 - B. first-come, first-served scheduling
 - C. shortest job scheduling
 - D. priority scheduling
86. In a system, there are several processes running in parallel. These processes are accessing the same data set and the outcome of the execution depends on the particular order in which the access takes place. What describes this situation best?
- A. Race condition
 - B. Starvation
 - C. Deadlock
 - D. Synchronization
87. What is critical section?
- A. A portion of code that manipulate shared resources/ variables
 - B. A portion of code that spends much time on CPU
 - C. A portion of code that must execute in parallel
 - D. A portion of code that is neither in the entry nor exit sections.
88. During the course of execution, a process may create several new processes, The creating process is called a _____
- A. New Process
 - B. Child process
 - C. Parent Process
 - D. Node Process

Formal Language and Complexity Theory

89. Which one of the following is **true** for NFA machine M to accept a string?
- A. all the symbols of input string must be scanned all the paths must end at an accepting state.
 - B. all the symbols of input string may not be scanned but it must reach at some accepting state.
 - C. all the symbols of input string is scanned and the last state is non-accepting.
 - D. all the symbols of input string must be scanned all, the paths must end at an accepting state.
90. Which of the following is false about Context-Free Grammar
- A. Context-free grammar is subset of Regular Grammar
 - B. Linear grammar is context-free grammar
 - C. Left Linear grammar is subset of context-free grammar

D. Left and right linear grammar are context-free grammars

91. Which one of the following languages is represent by the DFA below?



A. All sets of strings from $\Sigma=\{a,b\}$ that ends with substring **abb**.

B. All sets of strings from $\Sigma=\{a,b\}$ that starts with substring **ab** and ends with **b**.

C. All sets of strings from $\Sigma=\{a,b\}$ that starts with substring **abb**

D. All sets of strings from $\Sigma=\{a,b\}$ that starts with substring **ab** and ends with **bb**

92. The regular expression representation for the language which is accepted by the DFA on question number above

A. $a(a+b)^*$

B. $ab(a+b)^*b$

C. $a(a+b)^*bb$

D. $abb(a+b)^*b$

93. From the list of alternatives below, Identify the one which is different?

A. Left linear grammar

C. Right Linear Grammar

B. Regular Grammar

D. Linear Grammar

94. If a grammar is defined with $G=(V,T,S,P)$, with $A \rightarrow x$ where $A \in V, x \in (V \cup T)^*$, the type of grammar is?

A. Context Sensitive Grammar

C. Recursive Grammar

B. Regular Grammar

D. Context Free Grammar

Compiler Design

95. What is a compiler?

A. system program that converts source code to target code.

B. system program that converts machine language to high-level language

C. system program that writes instructions to for compilation

D. system program that converts low-level language to high-level language

96. Which of the following is Not a phase of compiler design?

A. Semantic analysis

B. Intermediate code generator

C. Code generator

D. Interpreter

97. What is the output of lexical analyzer?
- A. Machine code
 - B. Parse tree
 - C. Stream of tokens
 - D. Intermediate code
98. A process of replacing a variable name by choices on the right-hand side of grammar rules is:
- A. Derivation
 - B. Flow graph
 - C. Ambiguity
 - D. Precedence
99. From the following list which one is not primary tasks of code generator?
- A. Register allocation
 - B. instruction selection
 - C. Variables declaration
 - D. instruction ordering
100. From the alternative listed below, which one does NOT represent a target code?
- A. Three address code
 - B. Absolute machine code
 - C. Assembly language
 - D. Byte Code



Admas University
Faculty of Informatics
Department of Computer Science
Model Exit Exam
Answer Sheet



Sene __, 2015
Time allotted: 1:40 hrs

Name _____
ID.No. _____
Section _____

Answer Sheet

1.	2.	3.	4.	5.
6.	7.	8.	9.	10.
11.	12.	13.	14.	15.
16.	17.	18.	19.	20.
21.	22.	23.	24.	25.
26.	27.	28.	29.	30.
31.	32.	33.	34.	35.
36.	37.	38.	39.	40.
41.	42.	43.	44.	45.
46.	47.	48.	49.	50.
51.	52.	53.	54.	55.
56.	57.	58.	59.	60.
61.	62.	63.	64.	65.
66.	67.	68.	69.	70.
71.	72.	73.	74.	75.
76.	77.	78.	79.	80.
81.	82.	83.	84.	85.
86.	87.	88.	89.	90.
91.	92.	93.	94.	95.
96.	97.	98.	99.	100.

GOOD LUCK!