Admas University
Mekanisa Campus
Faculty of Informatics
Department of Computer Science
Model Exit Exam VI CODE MK-006

Name _____

ID.No._____

Model Exit Exam Computer Science

S.N	Theme	Course Title	Credit Hrs.	Number of Questions
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*

Theme 1:System Development

1. Which is one of the following statements is not true?
   A. Computer software is a product or program code developed by software engineers
   B. The software is the key element in all computer based systems and products
   C. Software consists of data and the related documents
   D. Every Project is temporary phase in the lifetime of an organization

2. Which is the most important feature in spiral model?
   A. Quality management
   B. Performance management
   C. Risk management
   D. Cost management

3. Which one of the following is false for Software life cycle?
   A. It breaks the problem of developing SW into successfully performing a set of phases
   B. It minimizes development cost.
   C. Each phase ends up with defined output
   D. It is Not allows proper checking of quality and progress at defined point during the development

4. Which of the following is not included in SRS?
   A. Non-Functionality
   B. Functionality
   C. Design solutions
   D. Coding

5. Which one of the following is not true about interviewing?
   A. The facts, opinion and speculation are gathered
   B. The SA has to spend a large amount of time
   C. SA can sometimes determine if people are answering truthfully
   D. Interviewing is passive and less rich information when comparing with others

6. The factors must be considered when selecting a project are:
   A. Perceived needs of the organization
   B. Existing systems and ongoing projects
   C. Resource availability
   D. Evaluation criteria   E. All

7. What is the correct HTML for adding a background color?
   A. <body bgcolor="yellow">
   B. <body bg="yellow">
   C. <background>yellow</background>
   D. a and b

8. One of the following is not correct way to add color.
   A. rgba(234,12,32,0.7)
   B. hsl(359,34%,70%)
   C. rgb(255,255,359)
   D. hsla(0,100%,23%,0.2)

9. one of the following is new in HTML5
   A. video tag   B. placeholder   C. picture   D. all are new

10. What does affected_rows() do?
    A. returns the number of rows in the table
    B. returns number of updated rows
    C. used to filter query injection
    D. all

11. Mysqli_connect takes one of the following parameters
    A. Database name   C. server name
    B. port number   D. username

12. One is used to display using JavaScrip
    A. document.write()   D. All
    B. window.alert()
    C. consol.log()

13. Assume the following requirement to answer the question below

"Authors are responsible for writing plays that are performed in theatres. Every time a play is performed, the author will be paid a royalty (a sum of money for each performance)".

start_transaction(T_1)
write_item(T_1, D, 20)
commit(T_1)
checkpoint
start_transaction(T_4)
write_item(T_4, B, 15)
commit(T_4)
start_transaction(T_2)
write_item(T_2, B, 12)
start_transaction(T_3)
write_item(T_3, A, 30)
write_item(T_2, D, 25) ← System crash

Which of the following cases is incorrect during database design using ER model of a given scenario?

A. Authors and plays will be shown as an attribute
B. **Paid and write are relationship that exists between** entities
C. Time is an entity that will exist in the model
D. A and C

14. The following picture shows the operation of the four concurrent transactions. Which of the following recovery strategy is correct about how each transaction recovers from the failure using differ update techniques?
    A. Transaction T1 needs a redo operation
    B. Transaction T4 needs a redo operation
    C. Transaction T2 and T4 require Undo/Redo operations
    D. Transaction T4 required Undo/No Redo operation

15. One of the following statements is incorrect while we create a database using a DBMS.
    A. ALTER command is used to create a constraint
    B. DROP command is used to remove data from the database

C. Primary key and unique constraints can be set during table creation

D. Adding data is accomplished by INSERT Command

16. An organization establishes a distributed database environment for its intensive day-to-day operation. All the existing nodes use SQL-server DBMS software. Which of the following is true if the established distribution system uses mixed hardware and software system?

A. Any newly added node can only use SQL-server DBMS

B. A newly added node can use Oracle DBMS

C. Adding a new node is not possible

D. A new node can only be added with the Windows operating system

17. Consider the schema Student (b, c), Course (c, d). For the following SQL query, which of the following logical plans in relational algebra gives more efficient?

SELECT student.d, FROM student, course WHERE student. b = course.b AND course.d = 3

A. First, join the two tables with their command filed and apply the select and projection operation in sequence

B. First, apply the select operation and then join the operation, and finally the projection operation

C. First, apply the projection and then the election operation, and finally the join operation

D. Any order can be efficient

18. Which one of the following is not DML

A. INSERT   B. DELETE TABELE   C. UPDATE   D Drop TABLE

19. Which type of constraint is used to enforce referential integrity?

A. Primary key constraint   C. Unique constraint

B. Check constraint   D. Foreign key constraint

20. Type of relationship that describes how many entities are participated in the relation

A. Carnality of relationship   C. Degree of relationship

B. generalization of relationship   D. Specialization of relationship

21. which one of the following is not true about SQL CHECK Constraint

A. The CHECK constraint is used to limit the value range that can be placed in a column.

B. If you define a CHECK constraint on a single column it allows only certain values for this column.

C. If you define a CHECK constraint on a table it can limit the values in certain columns based on values in other columns in the row.

D. If you define a CHECK constraint on a single column it allows only certain values for all columns.

22. Which one of the following is not among the advantages of DBMS

A. Concurrency Control Services   C. Recovery Services

B. Authorization Services (Security):   D. Data Generation Service

23. Which one of the following schema describes the structure and constraints for the whole database for a community of users?

A. External schema   B. Conceptual schema

C. Internal schema
D. Physical Schema

24. ___ is a set of principles concerned with how data is structured.
    A. Data integrity
    B. Data manipulation
    C. Data definition
    D. Data control

25. Type of relationship that describes how many entity types are participated in the relation
    A. Carnality of relationship
    B. generalization of relationship
    C. Degree of relationship
    D. Specialization of relationship

26. which one of the following is not true about SQL Primary Key constraint
    A. The PRIMARY KEY constraint uniquely identifies each record in a database table.
    B. Primary keys must contain unique values.
    C. A primary key column contain NULL values.
    D. Each table should have a primary key, and each table can have only one primary key.

27. Which one of the following SQL query syntax is used to drop a column from a table
    A. ALTER TABLE table_name DROP COLUMN column_name
    B. ALTER TABLE table_name DROP column_name
    C. ALTER TABLE table_namecolumn_name
    D. ALTER TABLE table_name DROP column_name   COLUMN

Theme 2. Programming and Algorithms

1. If we want a search function to search an array for some value and return either the index where the value was found, or -1 if not found, which of the following prototypes would be appropriate?
   A. void search(constint array, int target, intnumElements);
   B. void search(constint array, int target);
   C. int search(constint array[], intnumElements);
   D. int search(constint array[], int target, intnumElements);

2. What is wrong with the following code fragment?
```
constint SIZE =5;
float scores[SIZE];
for(int i=0; i<=SIZE;i++)
{
        cout<< "Enter a score\n";
        cin>> scores[i];
}
```
   A. Array indexes start at 1 not 0
   B. Arrays must be integers
   C. Array indexes must be less than the size of the array
   D. Should be cin>> scores[0];

3. What is the output of the following code fragment?
```
int i=5;
switch(i)
{
    case 0: i=15;break;
    case 1: i=25;break;
    case 2: i=35;break;
    case 3: i=40;
    default: i=0;
}
cout<< i <<endl;
```

      A. 15
      B. 25
      C. 35
      D. 40
      E. 0

4. What is the value of x after the following code executes?
```
int x=10;
if(x++ >10)
{
        x =13;
}
```

      A. 10
      B. 9
      C. 13
      D. 11

5. Which of the following is not a good reason for choosing a certain loop control?
      A. What the loop does
      B. The minimum number of iterations of the loop
      C. The condition for ending the loop
      D. If the loop is in a function

6. What is the output of the following code fragment?
```
int array[4][4], index1, index2;
for(index1=0;index1<4;index1++)
for(index2=0;index2<4;index2++)
array[index1][index2]=index1 + index2;
for(index1=0;index1<4;index1++){
for(index2=0;index2<4;index2++)
cout<< array[index1][index2] << " ";
cout<<endl;
```

}
A. 0 1 2 3
    1 2 3 4
    2 3 4 5
    3 4 5 6
B. 0 1 2 3
    0 1 2 3
    0 1 2 3
    0 1 2 3
C. 0 0 0 0
    1 1 1 1
    2 2 2 2
    3 3 3 3
D. 0 0 0 0
    0 1 2 3
    0 2 4 6
    0   3 6 9

7. Consider the following Java Program and then how many times it executes the output statement?

```
for (int x=1; x <= 2; x++)
{
for (int y=1; y <= 2; y++)
{
system.out.println ("Welcome");
}
}
```

A) 4   B) 2   C) 6   D) 1

8. In java program how to *read integer value* from keyboard?
Scanner input = new Scanner(System.in);

   A. int value = input.nextDouble();

   B. double value = input.nextInt();

   C. double value = input.nextDouble();

   D. int value = input.nextInt();

9. System.out.print("To the screen") is
   A. Console display statement
   B. GUI display statement
   C. Console Reading statement
   D. GUI reading statement

10. Which operator is used to *access* a data field or *invoke* a method from an object?
   A) The dot (.) operator   B) The new operator

C) The plus (+) operator   D) The asterix (*) operator

11. Which of these is correct way of inheriting class shape by class square?
    A) class square + class shape {}
    B) class square inherits class shape {}
    C) class square extends shape {}
    D) class square extends class shape {}

12. Given that the java program:
```
        class C1{
                privateint x;
                void m1( ) {}
                protected void m2( ){}
                public void m3( ){}
        }
        public class C2 extends C1{}
```
Which members of C1 would be accessible in C2 if C1 was a public class?

    A) x, m1(),m2() and m3()
    B) x and m2()
    C) m1(),m2() and m3()   D. m2() and m3()

13. Assume we have a tree with 9 numbers of nodes, so how money edges we have?
    A. 9   B.   8   C.   7   D.   10

14. _____ is a binary tree where each node except the leaf nodes has left and right children and all the leaves are at the same level.
    A. Full binary tree
    B. Complete binary tree
    C. Balanced binary tree
    D. binary tree

15. Which one of the following is complete graph?

    A.   B.   C.   D.
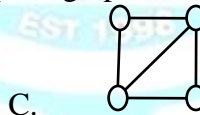
16. If a complete graph has n vertices, how many edges does it have?
    A. n(n-1)   C. n(n-1)/2
    B. n-1   D. n

17. Which one of the following is true about quick sort?
    A. pick one element to use as pivot
    B. Partition elements into two sub-arrays
    C. Quicksort two sub-arrays and Return results
    D. All are correct

18. Assume we have 8 unsorted elements and we need sorted using quick sort start from the middle, what is the median?
    A.   3   B.   4   C.   2   D.   1

19. _____ is one that contains no loops or parallel edges.
    A. simple graph   C. complete graph
    B. multiple graph   D. directed graph

20. Suppose that an intermixed sequence of (stack) push and pop operations are performed. The pushes push the integers 0 through 9 in order; the pops print out the return value. Which of the following sequence(s) could not occur?
    A. 4 3 2 1 0 9 8 7 6 5
    B. 4 6 8 7 5 3 2 9 0 1
    C. 2 5 6 7 4 8 9 3 1 0
    D. 4 3 2 1 0 5 6 7 8 9

21. Given the following declarations, which statement would put the value of 5 in the item part of the first node in the linked list?

```
struct Node
{    int item;
     Node* link;
};
Node* p;
p= new Node;
```

A. p.item=5;
B. p->item=5;
C. p=5;
D. item=5;

22. What does the first pass of selection sort do?

A.   Splits the array into two approximately equal pieces.

B.   Orders the first two elements of the array.

C.   Partitions the array into two unequal pieces depending on whether each element in the array is greater or less that some pivot element.

D.   Locates the smallest element in the array and swaps it into the zeroth position.

```
structListNode{
        float      volume;
        ListNode* next;
};
ListNode* headPtr;// always pointing to the first node
ListNode* ptr;
ListNode* temp;
float  searchVal;
```

23. Assume that *headPtr* is the external pointer to a linked list of many nodes. Which code segment below searches the list for the first occurrence of *searchVal*, leaving *ptr* pointing to the node where it was found? (Assume *searchVal* is definitely in the list.)

A) ptr = headPtr;
    while (volume != searchVal)
       ptr = next;
B) ptr = headPtr;
    while (ptr.volume != searchVal)
       ptr = ptr.next;
C) ptr = headPtr;

D) ptr = headPtr;
    while (ptr->volume != searchVal)
       ptr = ptr->next;

E) ptr = headPtr->volume;
    while (ptr != searchVal)
       ptr = ptr->next;

GOOD LUCK!

```
        while (ptr->volume != searchVal)
            ptr++;
```

24. In order to get the information stored in a Binary Search Tree in the *descending* order, one should traverse it in which of the following order?
    A. left, parent, right

    B. parent, left, right

    C. right, parent, left

    D. right, left, parent

25.   Suppose we are sorting an array of ten integers using some quadratic sorting algorithm. After four iterations of the algorithm's main loop, the array elements are ordered as shown here:
```
    12  13  14  15  16  11  17  18  19  20
```
Which statement is correct? (Note: Our selectionsort picks largest items first.)
    A. The algorithm might be either selectionsort or insertionsort.
    B. The algorithm might be selectionsort, but could not be insertionsort.
    C. The algorithm might be insertionsort, but could not be selectionsort.
    D. The algorithm is neither selectionsort nor insertionsort.

Theme 3. Computer Networking and Security

1. You have an interface on a router with the IP address of 192.168.100.154/27. What is the broadcast address of the hosts will use on this LAN?
    A. 192.168.100.129   C. 192.168.100.159
    B. 192.168.100.128   D. 192.168.100.158
2. From question number 7 what is the network address the hosts will use on this LAN?
    A. 192.168.100.129   C. 192.168.100.159
    B. 192.168.100.128   D. 192.168.100.158
3. From question number 7 what is the number of hosts on this LAN?

    A. 30   B. 32   C. 8   D. 16

4. If **Admas University** main Campus wants to develop a network for main branch that linked with **Mekanisa** Campus, what network type is applicable for this situation in order to share information between the two Campuses?
    A) MAN   B) WAN   C) LAN   D)WLAN
5. Which layers of the OSI model are network supporting layers?
    A) Session, Presentation, Application
    B) Network, Session, Presentation
    C) Physical, Datalink, Network
    D) Physical, Network, Transport
6. For one computer to send a message to another computer, the source computer must perform the following steps except
    A. Break the data into small sections
    B. Add addressing information to the packets identifying the source and destination computers
    C. Accept the data from the NIC

D. Deliver the data to the network interface card for transmission over the network

7. Which of the following is not function of subletting?
   A. Facilitated spanning of large geographical distances
   B. Simplified management
   C. Reduced network traffic
   D. Reduce network performance
8. Transport layer is concerned with
   A. Node to Node delivery
   B. Host to Host Delivery
   C. Process to process Delivery
   D. Router to router Delivery
9. Which of the following function are done by UDP
   A. Flow Control
   B. Error control
   C. Connection control
   D. Segmentation and reassembly
10. Which of the following is not an example of data communication?
    A. A teletype printing news bulletins.
    B. A computer transmitting files to another computer
    C. An automatic teller machine checking account balance with the bank's computer
    D. A salesman telephoning orders to the office
11. When independent networks or links are connected to create internetworks or a large network, the connected devices route the packet to their destination. This functionary is done by which layer?
    A. Data Link
    B. Physical
    C. Transport
    D. Network
12. Which layers of the OSI model are host-to-host layers?
    A. Transport, Session, Presentation, Application
    B. Network, Transport, Session, Presentation
    C. Datalink, Network, Transport, Session
    D. Physical, Datalink, Network, Transport
13. Which of the following is true about TCP/IP protocol
    A. TCP/IP is a protocol just recently developed for wireless devices
    B. TCP/IP is responsible for looking up IP addresses
    C. TCP/IP is a communication protocol that enables you to send and receive information over the internet
    D. TCP/IP is not used very often and could be retired as a protocol
14. Which of the following is not is not matched with the OSI layers and the Address they used
    A. Transport Layer-Port Number
    B. Datalink layer –MAC Address
    C. Network Layer-IP Address
    D. Physical Layer-Bits per second

15. Routing tables of a router keeps track of
    A. MAC Address Assignments
    B. Port Assignments to network devices
    C. Distribute IP address to network devices
    D. Routes to use for forwarding data to its destination
16. When data is encapsulated, which is the correct order?
    A. Data, frame, packet, segment, bit
    B. Segment, data, packet, frame, bit
    C. Data, segment, packet, frame, bit
    D. Data, segment, frame, packet, bit
17. Which of the following statements is not the functions of a Transport layer
    A. Enables multiple applications to communicate over the network at the same time on a single device
    B. Ensures all the data is received reliably and in order by the correct application
    C. Employs error handling mechanisms
    D. Delivery of packet from Source to destination
18. What is the purpose of flow control?
    A. To ensure that data is retransmitted if an acknowledgment is not received
    B. To reassemble segments in the correct order at the destination device
    C. To provide a means for the receiver to govern the amount of data sent by the sender
    D. To regulate the size of each segment
19. Among the types of hackers _____ is a type of hackers are among the low-abiding citizens but venture in to illegal activity?
    A. Black Hat Hacker
    B. Red Hat Hacker
    C. Gray Hat Hacker
    D. White Hat Hacker
20. Active attacks attempts to alter system resources or affects their operation. It is very difficult to prevent active attacks absolutely.
    A. Active attack   B. Passive Attack   C. Medium attack   D. All
21. Which type of threat destroyed or becomes unavailable or cannot be used.
    A. Interruption   B. Interception   C. Modification   D. Fabrication
22. which one describes data cannot be modified undetectably
    A. Confidentiality   B. Integrity   C. Availability   D. Authenticity
23. Which one of the following describes that information must be available when it is needed
    A. Confidentiality   B. Integrity   C. Availability   D. Authenticity
24. Which one of the following describes that it is necessary to ensure that the data, transactions, communications or documents are genuine
    A. Confidentiality   B. Integrity   C. Availability   D. Authenticity
25. Which one of the following is not ingredients of encryption schema
    A. Cipher text   B. Secret Key   C. Hash Key   D. Plaintext

1. The expected performance of rational agents at any given point depends on: -
    A. Percept Sequence   C. Knowledge from Environment
    B. Possible Actions   D. All
2. Which of the following is an element used to create well defined problems?
    A. Goal test function   C. Path cost function
    B. Successor function   D. All
3. The process of finding what sentences are entailed is called _____.
    A. Entailment   C. Valid sentence
    B. Inference   D. Mode
4. The general approach for informed search strategy is called_____.
    A. Depth first search   C. Best first search
    B. A* search   D. Depth limited search
5. Which of the following search algorithms property helps to make sure if algorithm guaranteed to find a solution when there is one?
    A. Completeness   C. Time Complexity
    B. Optimality   D. Space Complexity
6. Which of the following heuristic is more powerful guide?
    A. Degree heuristic
    B. Minimum Value remaining heuristic
    C. Least constraining value heuristic
    D. All of the above

1. What is an operating system?
    E. Interface between the hardware and application programs
    F. Collection of programs that manages hardware resources
    G. System service provider to the application programs
    H. All of the mentioned
2. To access the services of the operating system, the interface is provided by the _____
    A. Library
    B. System calls
    C. Assembly instructions
    D. API
3. CPU scheduling is the basis of _____
    A. multiprogramming operating systems
    B. larger memory sized systems
    C. multiprocessor systems
    D. none of the mentioned

4. Which one of the following is not true?
   A. kernel remains in the memory during the entire computer session
   B. kernel is made of various modules which can not be loaded in running operating system
   C. kernel is the first part of the operating system to load into memory during booting
   D. kernel is the program that constitutes the central core of the operating system
5. Which one of the following errors will be handle by the operating system?
   A. lack of paper in printer
   B. connection failure in the network
   C. power failure
   D. all of the mentioned

6. Where is the operating system placed in the memory?
   A. either low or high memory (depending on the location of interrupt vector)
   B. in the low memory
   C. in the high memory
   D. none of the mentioned
7. One of the following is true about memory-mapped I/O.
   A. A part of the memory is specifically set aside for the I/O operation
   B. The I/O devices and the memory share the same address space
   C. The I/O devices have a separate address space
   D. The memory and I/O devices have an associated address space
8. One of the following is advantages of I/O mapped devices to memory mapped.
   A. The devices connected using I/O mapping have a bigger buffer space
   B. The devices have to deal with fewer address lines
   C. The former offers faster transfer of data
   D. All
9. The method of accessing the I/O devices by repeatedly checking the status flags is
   A. I/O mapped
   B. Memory-mapped I/O
   C. Program-controlled I/O
   D. All
10. One of the following is true about virtual memory, except
    A. It doesn't improve the execution of the program.
    B. It provides better memory transfer.
    C. It provides effective memory access.
    D. All of the above.
11. What is the use of interrupts signal during the input- output operations?
    A. It is sent by processor to terminate I/O operations.

    B. It helps to activate I/O modules and peripherals.

C. It is sent by I/O module to inform the processor when it is ready to exchange data.

D. All except B.

12. Which of the following statements is/are correct in auxiliary memory
    A. It stores information that is necessarily in current use.
    B. It is faster than main memory
    C. It is higher capacity than primary memory.
    D. It is volatile storage media.

1. Given the following productions: E→E * F| E + F| F

   F→F – F | id

   Which one of the following is True?

   A. * has higher precedence than +   C. – and + have the same precedence

   B. - has higher precedence than *   D. + has higher precedence than *

2. Which of the following derivation does a top - down parser uses while parsing an input string?

   A. Left-most derivation in reverse   C. Right-most derivation in reverse

   B. Left-most derivation   D. Right –most derivation

3. All of the following are functions of semantic analysis except _____.
    A. Do operators match their operands?

    B. Do types of variables match the values assigned to them?

    C. Do function parameters match the function declarations?

    D. Have called function and variable names been declared?

    E. Do statements miss semi-colon?

4. Which of the following features cannot be captured by context free grammar?

   A. Syntax of if-then-else statements   C. A variable is declared before its use

   B. Syntax of recursive functions   D. Matching nested parenthesis

5. The regular expression for the language of all strings of 0's and 1's with no two consecutive 0's

   is_____

   A. (0+1)   C. (0+∈) (1+10)*

   B. (0+1)*   D. (0+1)* 011

6. Consider the grammar: S→FR

   R→* S| €

   F→id

   In the predictive parsing table M, of the grammar, the entries M[S, id] and M[R, $] respectively

   A. (S→FR) and (R→ €)   B. (S→FR) and (R→ {})

C. (S→FR) and (R→ * S)　　　　　　　　　　D. (F→ id) and (R→ €))

7. Consider three decision problems P_1 P_2 and P_3. It is known that P_1 is decidable and P_2 is undecidable. Which one of the following is TRUE?

A. P_3 is decidable if P_1 is reducible to P_3

B. P_3 is undecidable if P_3 is reducible to P_2

C. P_3 is undecidable if P_2 is reducible to P_3

D. P_3 is decidable if P_3 is reducible to P_2's complement

8. What type of language do Turing machines generate?
A. Regular languages

B. Context free

C. Recursive enumerable languages

D. Content sensitive

9. 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 and 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 and one the paths must end at an accepting state.

E. None of these

10. The regular expression r = b*ab* + b* represents any string w over {a,b}:

A. starting with b and having no other a's or having no a's but only b's

B. having at least one a

C. having at most one a's

D. starting with b and ending with a

11. A universal Turing machine is _____

A. Two tape Turing machine　　　　　　　　C. Reprogrammable Turing machine

B. Single tape Turing machine　　　　　　　D. All of these

12. Let X be a problem that belongs to the class NP. Then which one of the following is TRUE?

A. There is no polynomial time algorithm for X

B. If X can be solved deterministically in polynomial time, then P = NP.

C. If X is NP-hard, then it is NP-complete   D. X may be undecidable

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

Name _____

ID.No._____

Section _____

Answer Sheet

Fundamentals of Software Engineering					
1. C	2. B	3. D	4. D	5. D	6. E
Web Programming					
7. A	8. C	9. D	10. B	11. C	12. D
Database Systems					
13. B	14. B	15. B	16. B	17. B	18. B
19. D	20. A	21. D	22. D	23. B	24. C
25. C	26. C	27. C			

Computer Programming						
1. D	2. C	3. E	4. A	5. D	6. A	
Object Oriented Programming						
7. A	8. D	9. A	10. A	11. C	12. A	
Design and Analysis of Algorithms						
13. B	14. C	15. B	16. A	17. D	18. A	
Data Structure and Algorithms						
19. A	20. B	21. B	22. D	23. D	24. D	25. C

Data Communication and Computer Networking					
1. C	2. B	3. A	4. A	5. C	6. C
Computer Security					
7. D	8. C	9. D	10. A	11. D	12. A
Network and System Administration					
13. C	14. D	15. D	16. C	17. D	18. C
19. C	20. A	21. A	22. B	23. C	24. D

Introduction to Artificial Intelligence					
1. A	2. A	3. B	4. B	5. A	6. B

Operating System					
1. C	2. D	3. A	4. D	5. A	6. C
Computer organization and architecture					
7. B	8. B	9. C	10. A	11. C	12. C

Formal Language and Complexity Theory					
1. B	2. B	3. E	4. C	5. C	6. D
Compiler Design					
7. B	8. C	9. D	10. A	11. C	12. B

GOOD LUCK!