Q1// choose the correct answer:

1. A* algorithm is ________ search algorithm.
   a) Blind  b) Approximated  c) Heuristic  d) Hybrid

2. Prolog language strategy depends on ________ technique.
   a) Backtracking  b) Forward  c) Hybrid  d) Random

3. CFG used in NLP as a technique in ________ stage.
   a) Dictionary  b) Syntax  c) Semantic  d) Morphology

4. Knowledge Base is the heart of ____________.
   a) Expert System  b) NLP  c) ANN  d) GA

5. Frame knowledge representation useful in ____________.
   a) General Purpose  b) Family relationship  c) Certainty  d) Intelligent Database

6. The Cut (!) operator in Prolog using for prevent ____________.
   a) Fail  b) Search  c) Backtrack  d) Verification

7. Hopfield NN is ________ learning type of NN.
   a) Supervised  b) Unsupervised  c) Self-Organization  d) Hybrid

8. Genetic algorithm useful in search for ____________.
   a) Data  b) Goal  c) Path  d) Information

9. Ridge is a problem in ____________ search algorithm.
   a) Depth First  b) A*  c) Hill Climbing  d) SSS*

10. Producer-consumer problem is used to illustrate a model of cooperating processes or threads using:
    a) Zero capacity buffer  b) Bounded buffer  
    c) Unbounded buffer  d) Bounded and unbounded buffers

11. the operating system may work to forbidden at least one of the necessary conditions of deadlock, this method is used to:
12. given a computer system with segmentation memory management scheme, taking in consideration the segment table

<table>
<thead>
<tr>
<th></th>
<th>limit</th>
<th>Base</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1000</td>
<td>1400</td>
</tr>
<tr>
<td>1</td>
<td>400</td>
<td>6300</td>
</tr>
<tr>
<td>2</td>
<td>400</td>
<td>4300</td>
</tr>
<tr>
<td>3</td>
<td>1100</td>
<td>3200</td>
</tr>
<tr>
<td>4</td>
<td>1000</td>
<td>4700</td>
</tr>
</tbody>
</table>

The logical address < 2, 52> mapping the physical address:

a) 4352  b) 6352  c) 6752  d) 2452

13. the type of CPU scheduling algorithm that is suitable for Real time Computer system is:
   a) FCFS algorithm
   b) Priority scheduling algorithm
   c) Round Robin algorithm
   d) SJF algorithm

14. in Round Robin algorithm, if the time quantum q=5, and the number of processes n=7, then the largest wait time of a process to get next CPU attention equals to:
   a) 35  b) 28  c) 30  d) 34

15. given the following process with their CPU burst time and the SJF algorithm is used to schedule these process

<table>
<thead>
<tr>
<th>Process</th>
<th>CPU burst</th>
</tr>
</thead>
<tbody>
<tr>
<td>P1</td>
<td>5</td>
</tr>
<tr>
<td>P2</td>
<td>8</td>
</tr>
<tr>
<td>P3</td>
<td>2</td>
</tr>
<tr>
<td>P4</td>
<td>9</td>
</tr>
</tbody>
</table>

Then the average waiting time of these processes is:
   a) 5  b) 6  c) 7  d) 8

16. the Run time mapping from virtual to physical address is achieved by:
   a) MMU  b) MUM  c) UMM  d) UUM

17. Medium term scheduling algorithm is used to schedule the processes in:
   a) Hard Disk  b) Main Memory
   c) Backing Store  d) Hard disk and main memory together

18. the region of memory that holds copies of the data is called
   a) Buffer  b) Caching  c) Spooling  d) Device reservation
19. The main application of image subtraction is ................. .
   a) noise removal  b) change detection  c) edge detection

20. ............... is the function showing for each gray level the number of pixels in the image that have that gray level.
   a) image histogram  b) image file format  c) image file header

   a) decrease  b) increase  c) has no effect on

22. .............is a popular technique for improving the appearance of a poor image.
   a) edge detection  b) region labeling  c) histogram equalization

23. The image ........ is the process of selection a small portion of the image and cutting it away from the rest of the image.
   a) enlarge  b) crop  c) shrink

24. ................. is the process of discovering, identifying and understanding patterns that are relevant to the performance of an image based task.
   a) image analysis  b) image noise removal  c) pixel connectivity

25. Digital images are corrupted by noise during ............
   a) image acquisition  b) image transmission  c) both of the two previous cases

26. All low pass filters has the negative effect of ........ an image.
   a) sharpen  b) blur  c) increase contrast

27. Median filter operate perfectly with ............. type noise.
   a) salt and pepper  b) Gaussian  c) uniform

28. The computer graphics is defined as the sum total of methods and techniques for converting data for a graphics device by -----------
   a) Machine  b) user  c) manufacture  d) computer

29. The two main areas of research in computer graphics are ...........
   a) Modeling and visualization  b) Design and implementation
c) Searching and representation  d) Syntax analysis and semantic analysis

30. In computer graphics, the input data are non visual and the output is ------that can be seen through some graphics output device.
   a) data  b) an image  c) a diagram  d) a flowchart

31. Computer vision is interested in analyzing images, while computer graphics is interested in ........... them.
   a) distributed  b) designing  c) synthesizing  d) processing

32. Vector graphics are images generated by graphics ............ such as line and circle.
   a) orders  b) commands  c) texts  d) parts
33. The file name variable is the name of the file containing the graphic. This file can have --- extension.
   a) BMP  b) GIF  c) JPG  d) all of the above

34. The method for drawing lines is using Line and it has the following syntax-------.
   a) Line (x1-y1)-(x2-y2)  b) Linexy  c) Line(x)-(y)  d) Line(x)+(y)

35. The letter B is added to the command when we need to draw --------.
   a) arcs  b) circles  c) boxes  d) chart

36. Each color you can display on a computer monitor can be defined in terms of three basic components: ---------.
   a) Blue, Yellow, White  b) Red, Green, Blue
   c) Yellow, Black, White  d) Black, White, Green

37. Passive attacks are in the nature of eavesdropping on, or monitoring of, transmissions.
   Two types of passive attacks are………..
   a) release of message contents and traffic analysis
   b) masquerade and reply
   c) replay and modification of messages
   d) masquerade and traffic analysis.

38. Simple substitution ciphers replace each character of plaintext with a corresponding character of ciphertext by mapping:
   a) one-to-many  b) one-to-one  c) many-to-many  d) many-to-one.

39. If the key to a substitution ciphers is a random sequence of characters and is not repeated, there is not enough information to break the cipher. Such a cipher is called a ……:
   a) Beaufort cipher  b) one-time-pad  c) Playfair cipher  d) product cipher.

40. Differential cryptanalysis is the first published attack that is capable of breaking …. in less than $2^{55}$ complexity.
   a) RSA  b) DES  c) ECC  d) MD4

41. A stream cipher is one that encrypts a digital data stream one bit or one byte at a time.
   Examples of classical stream ciphers are ……….
   a) the autokeyed Vigenère cipher and the Vernam cipher
   b) playfair cipher and homophonic cipher
   c) homophonic and higher order homophonic
   d) all the above.

42. There are two different approaches to stream encryption:
   a) synchronous method and self-synchronous method
   b) Auto key cipher and cipher feedback mod
   c) Out-block feedback mode and counter method
   d) Autokey system.

43. ……… Is the science and study of methods of breaking ciphers.
   a) cryptography  b) cryptology  c) cryptanalysis  d) cryptosystem
44. A .......... attack involves trying every possible key until an intelligible translation of the ciphertext into plaintext is obtained.
   a) man-in-the-Middle Attack    b) active attack
   c) brute-force attack        d) Timing attacks.

45. .......... rearrange characters according to some scheme. This rearrangement was classically done with the aid of some type of geometric figure.
   a) Substitution ciphers      b) transposition ciphers
   c) product ciphers          d) Hill ciphers.

46. Which data structure allows sequential access?
   a) Sorted List.   b) Linked List   c) Array      d) Binary tree

47. An overloaded + operator takes a class object and a double as operands. For it to be commutative (i.e., a + b and b + a both work), operator+ must be a member function of the class from which the objects are
   a) instantiated.
   b) operator+ must be a non-member function.
   c) the operator+ function that takes the object as the left operand must be a member function, and the other operator+ must be a non-member function.
   d) both operator+ functions must be non-member friend functions of the class.

48. Which statement about operator overloading is false?
   a) New operators can never be created.
   b) Certain overloaded operators can change the number of arguments they take.
   c) The precedence of an operator cannot be changed by overloading.
   d) Overloading cannot change how an operator works on built-in types.

49. What data structures are usually called FIFO
   a) Linked Lists   b) Stacks   c) Circular Queues   d) Circular linked lists

50. The correct function name for overloading the addition (+) operator is:
   a) operator+   b) + operator   c) operator(+)   d) operator:+

51. Many list functions need to change the caller's head pointer. To do this in the C language, pass a pointer to the head pointer. Such a pointer to a pointer is sometimes called a "reference pointer". The main steps for this technique are...
   a) Design the function to take a pointer to the head pointer. To change a struct node*, pass a struct node**.
   b) Use '&' in the caller to compute and pass a pointer to the value of interest.
   c) Use '*' on the parameter in the callee function to access and change the value of interest.
   d) None of the above.

52. 7. If we declare a queue template class with dynamic allocation, then we can declare queue of integer of length 100 as:
   a) int queue Q1[100];
   b) template queue <int> Q1(100);
c) queue <int> Q1(100);
d) class int queue (100) Q1;

53. Occasionally we may need to grant a function access to the nonpublic members of a class. Such an access is obtained by declaring the function as:
   a) A friend of the class.
   b) A protected part of the class.
   c) A constructor function.
   d) A subclass member function.

54. When a class member function is called, it receives an implicit argument which denotes the particular object (of the class) for which the function is invoked. Within the body of the member function, one can refer to this implicit argument explicitly as:
   a) Structure
   b) This
   c) Pointer
   d) &

55. Secondary memory is generally ……………………
   a) much small in capacity but also much slower than main memory.
   b) much large in capacity but also much slower than main memory.
   c) much small in capacity but also much faster than main memory.
   d) much large in capacity but also much faster than main memory.

56. Data transfer instructions, which cause information to be copied from one location to another ………………………
   a) in the processors internal memory.
   b) in the external main memory.
   c) either in the processors internal memory or in the external main memory.
   d) in the processors internal memory and in the external main memory.

57. Choose the correct Statement.
   a) The I/O device has direct access to secondary memory
   b) The I/O device has direct access to main memory
   c) The I/O device does not have direct access to data
   d) The I/O device does not have direct access to main memory

58. The addressing modes of the operands appearing in a ……………………..
   a) The addressing modes of the operands appearing in a machine – language instruction
   b) The addressing modes of the operands not appearing in a machine – language instruction
   c) The addressing modes of the operands appearing in any – language instruction
   d) The addressing modes of the operands appearing only in a high level – language instruction.

59. Choose the correct Statement.
   a) RISC architecture restricts the number of addressing that access main memory.
   b) RISC architecture restricts the number of iteration that access main memory.
   c) RISC architecture restricts the number of fetching that access main memory.
   d) RISC architecture restricts the number of instruction that access main memory.
60. Cache memories used for storing .............................
   a) both instruction and data.  b) only instruction.  c) only data.  d) no one of upper.

61. Parallel computers carried out their computations ..................
   a) Bit by bit  b) Byte by byte  c) Word by word.  d) no one of upper

62. If the m units process the same instruction stream we obtain ........ organization
   a) MIMD  b) SISD  c) SIMD  d) MISD

63. Microprogramming is a method of control design in which the control-signal selection and sequencing
    information is stored in a ROM or RAM called ......................
   a) cache memory  b) control memory  c) main memory  d) secondary memory

64. The E-R model based on a perception of real world consists of set of object called …
   a) Tables and relationships between them.
   b) Attributes and relationships between them.
   c) Entities and relationships between them.
   d) Values and relationships between them.

65. The E-R model developed in order ............
   a) Facilitate the overall logical structure of DB.
   b) Facilitate the overall physical structure of DB.
   c) Facilitate the overall users views structure of DB.
   d) Facilitate DB design scheme.

66. An entity is an object that include .........
   a) Values not be disjoin.
   b) The same types of attributes.
   c) That exist and not distinguish be from other objects.
   d) That exist and distinguish be from other objects.

67. For each attribute there is a set of ............ called ...........
   a) Same types of values, records.
   b) Same types of data, domain.
   c) Set of permitted values, domain.
   d) Set of permitted data, file.

68. The domain of attribute might be the set of all ...........
   a) positive integers.
   b) text strings of certain length.
   c) positive integer and text strings of certain length.
   d) date or positive integers or text string of certain length.

69. A DB includes a collections of ............ , each of which contains any Number of ............ the same type.
   a) Files, data.  b) Data, files.
   c) Entity set, attributes.  d) Entity set, entities.
70. One important constraint to which the DB must conform is ………
   a) Mapping development.  b) Mapping constraints
   c) Mapping cardinalities.  d) Mapping representation.

71. A super key is a set of one or more attributes which ………
   a) identify several entities in the entity set.
   b) identify several attributes in the entity set.
   c) identify uniquely an entity in the entity set.
   d) identify uniquely an attribute in the entity set.

72. In order for a weak entity set to be meaningful, it must be part of ...
   a) one-to-one relationship    b) one-to-many relationship
   c) many-to-one relationship  d) many-to-many relationship

73. One of these options is not compilation step.
   a) Semantic
   b) Syntax
   c) Code Optimization.
   d) Segmentation.

74. Parsing Step means:
   a) Syntax analysis b) Lexical analysis c) Object Program d) Not all above

75. The Intermediate Code Generation is:
   a) Is the process of determining if a string of tokens can be generated by grammar.
   b) Generate an explicate intermediate representation of the source program.
   c) Generates a target code consisting normally of machine code.
   d) Not all above.

76. Lexical Token is:
   a) The set of strings is described by a rule.
   b) A program that reads a program in one language.
   c) Sequence of characters that can be treated as a unit in the grammar of the programming languages.
   d) Not all above.

77. The semantic analysis step that be located between the
   a) Syntax and intermediate code generation.
   b) Lexical and code optimization.
   c) Lexical and syntax.
   d) Not all above.

78. Interpretive process represent the
   a) Compiler.  b) Editor.  c) Linker.  d) Not all above.

79. The run time represents the time that occurs during
   a) Translate a source program to an object program.
   b) Execution of the object program.
   c) Translate from lexical to code generation.
   d) Not all a above.

80. The grammar that produces more than one parse tree for the same sentence is called:
   a) Ambiguity problem.
   b) Left factoring problem.
   c) Left recursion problem.
   d) Not all above.

81. The LR parsing means:
   a) bottom up parsing
   b) top down parsing
   c) predictive parsing
   d) Not all above.

82. In OSI network architecture, the dialogue control and token management are the responsibility of:
   a) session layer
   b) network layer
   c) transport layer
   d) data link layer

83. Which of the following communication modes support two-way traffic but in only one direction at a time?
   a) simplex
   b) half duplex
   c) three-quarters duplex
   d) all of the above

84. Which of the following might be used by a company to satisfy its growing communications needs?
   a) front end processor
   b) multiplexer
   c) controller and concentrator
   d) all of the above

85. A data terminal serves as:
   a) Effector
   b) sensor
   c) both a and b
   d) neither a nor b

86. Which of the following transmission systems provide the highest data rate to an individual device?
   a) computer bus
   b) telephone lines
   c) voice and mode
   d) lease lines

87. What does ASP stand for?
   a) All Standard Pages
   b) Active Server Pages
   c) A Server Page
   d) Active Standard Pages

88. ASP server scripts are surrounded by delimiters, which?
   a) <%...%>
   b) <&.../&>
   c) <script>...</script>
   d) <%>...

89. What is the default scripting language in ASP?
   a) JavaScript
   b) EcmaScript
   c) VBScrip
   d) PERL

90. How can you script your ASP code in JavaScript?
   a) Start the document with: <% language="javascript" %>
   b) Start the document with: <%@ language="javascript" %>
   c) End the document with: <% language="javascript" %>
   d) JavaScript is the default scripting language
Q2// Answer the following:
1. Draw the conceptual graph for the following paragraph.
   “Ali have a nice red car, he come to the job by his car, Maha come with Ali to the job. 
   Ali working in a computer company, in the marketing department. Maha working in the 
   IT department in the same company.”

2. Briefly describe the image segmentation techniques, which of them gives better results, 
   discuss your answer.

3. What are the requirements that must satisfy to convert the simple knapsack algorithm to 
   hard knapsack algorithm? Write hard knapsack algorithm.

4. Answer The Following
   A-Explain what is ADO and write ASP code to connect with Access
   B- How to call a VBScript procedure from ASP. Give example