

## ADVANCED JAVA PROGRAMMING

1. What letter precedes swing component? – a) A, b) J, c) D, d) W
2. What is Default Layout in a frame? – a) Border Layout, b) Grid Layout, c) Flow Layout, d) Card Layout
3. Which class represents an Internet Protocol address? – a) InetAddress, b) Address, c) IPAddress, d) TCPAddress
4. MAC address is – a) logical, b) physical, c) link, d) Uplink
5. IPv4 address is of – a) 46 bits, b) 32 bits, c) 48 bits, d) 16 bits
6. URL is – a) uniform resource locator, b) uniform resource allocator, c) unified resource locator, d) both a) & b)
7. Socket address is consisting of – a) port number and ip address, b) port number, c) ip address, d) class
8. Which is a package? – a) javax.swing, b) java.awt, c) java.io, d) all of these
9. Which of the following is a transport layer protocol? – a) IP, b) UDP, c) TCP, d) both b and c
10. What is ActionListener? – a) class, b) interface, c) object, d) method
11. What is the full form of UTF? – a) unicode transformation format, b) universal transformation format, c) universal transformation form, d) unicode transfer form
12. Give the full form of AWT – a) Applet Windowing Toolkit, b) Abstract Window Toolkit, c) Absolute Windowing Toolkit, d) Abstract Window Toolbar
13. What kind of protocol is UDP? – a) connection oriented, b) connectionless, c) path oriented, d) both a and b
14. Which of the following methods is used to set a component in a specific position of a frame? – a) setColor, b) setBounds, c) setVisible, d) setLayout
15. What is the end point of communication called? – a) port address, b) docket, c) socket, d) IP address
16. Port number of HTTP is – a) 80, b) 72, c) 66, d) 60
17. Which of the following class does not belong to AWT? – a) Button, b) CheckBox, c) JRadioButton, d) Frame
18. Which of the following class represents a TCP server socket? – a) Socket, b) ServerSocket, c) DatagramSocket, d) DatagramPacket
19. Which of the following is used to create a dropdown? – a) JButton, b) JComboBox, c) JRadioButton, d) JFrame
20. Which of the following is a network layer protocol? – a) Telnet, b) HDLC, c) IP, d) UDP

1. Differentiate between AWT and SWING.
2. Write a program to create a menubar with three menus in a frame.

# SUBJECT: SYSTEM PROGRAMMING AND COMPILER DESIGN

1	What is a compiler? - a) system program that converts instructions to machine language, b) system program that converts machine language to high-level language, c) system program that writes instructions to perform, d) None of the mentioned
2	Which of the following error can a compiler check? - a) Syntax Error, b) Logical Error, c) Both Logical and Syntax Error, d) Compiler cannot check errors
3	A programmer, writes a program to multiply two numbers instead of dividing them by mistake, how can this error be detected? - a) Compiler or interpreter, b) Compiler only, c) Interpreter only, d) None of the mentioned
4	Who is responsible for the creation of the symbol table? - a) Assembler, b) Compiler, c) Interpreter, d) All of the mentioned
5	Which of the following is known as a compiler for a high-level language that runs on one machine and produces code for a different machine? - a) Cross compiler, b) Multipass compiler, c) Optimizing compiler, d) One pass compiler
6	Which of the following phase of the compiler is Syntax Analysis? - a) Second, b) Third, c) First, d) All of the mentioned
7	In which of the following phase of the compiler is Lexical Analyzer? - a) Second, b) Third, c) First, d) All of the mentioned
8	Characters are grouped into tokens in which of the following phase of the compiler design? - a) Code generator, b) Lexical analyzer, c) Parser, d) Code optimization
9	The lexical analyzer takes _____ as input and produces a stream of _____. a) Source program, tokens, b) Token, source program, c) Either of the two, d) parse tree, syntax tree
10	Parsing is also known as a) Lexical Analysis, b) Syntax Analysis, c) Semantic Analysis, d) Code Generation
11	A top down parser generates _____ a) Rightmost Derivation, b) Right most derivation in reverse, c) Left most derivation, d) Left most derivation in reverse
12	Which of these does not belong to CFG? - a) Terminal Symbol, b) Non terminal Symbol, c) Start symbol, d) End Symbol
13	Which of the following grammar rules violate the requirements of an operator grammar? (i) $P \rightarrow QR$ , (ii) $P \rightarrow QR$ , (iii) $P \rightarrow e$ , (iv) $P \rightarrow QR$ a) (i) only, b) (i) and (iii) only, c) (ii) only, d) (iii) and (iv) only
14	What is the similarity between LR, LALR and SLR? - a) Use same algorithm, but different parsing table, b) Same parsing table, but different algorithm, c) Their Parsing tables and algorithm are similar but uses top down approach, d) Both Parsing tables and algorithm are different
15	Which of the following is not an intermediate form? - a) postfix notation, b) syntax tree, c) TAC, d) assembly code
16	What is the fifth phase of compilation? - a) code optimization, b) code generation, c) lexical analysis, d) syntax analysis
17	Which of the following is not used to implement TAC? - a) quadruple, b) triple, c) indirect triple, d) quintuple
18	Where does the operator appear in a syntax tree? - a) leaf node, b) interior node, c) root node, d) in all the nodes
19	Which of the following searching technique is better in terms of time complexity when the elements are sorted in ascending order? - a) exhaustive search, b) linear search, c) binary search, d) heuristic search

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20. The context free grammar  $S \rightarrow SS \mid OS \mid IS \mid \epsilon$  generates \_\_\_\_\_

a) Equal number of 0's and 1's, b) Unequal number of 0's and 1's, c) Number of 0's followed by any number of 1's, d) None of the mentioned

1. Translate the following expression to quadruple, triple and indirect triple-

$A + b \times c / e \uparrow f + b \times c$

2. Consider the grammar-

$S \rightarrow bB / aA$

$A \rightarrow b / bS / aAA$

$B \rightarrow a / aS / bBB$

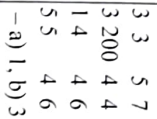
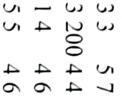


For the string  $w = bbaabababa$ , find-

a) Leftmost derivation

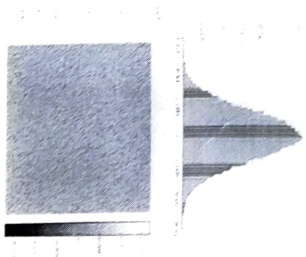
b) Rightmost derivation

c) Parse Tree

## DIGITAL IMAGE PROCESSING

1.	Number of frame buffer required to represent a black and white image is – a) 1, b) 2, c) 3, d) 4.
2.	Number of frame buffer required to represent a gray scale image is – a) 1, b) 2, c) 3, d) 4.
3.	Number of frame buffer required to represent a color image is – a) 1, b) 2, c) 3, d) 4.
4.	Minimum number of bits required to represent a binary image is – a) 1, b) 2, c) 3, d) 4.
5.	Detect noise from the following image <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div>           3 3 5 7            3 200 4 4            1 4 4 6            5 5 4 6            – a) 1, b) 3, c) 5, d) 200.         </div> </div>
6.	In medical image processing which of the following operations is done frequently – a) addition, b) multiplication, c) subtraction, d) negation.
7.	Which following operation will you choose if your image is not bright – a) addition, b) multiplication, c) subtraction, d) negation.
8.	To get more details from an gray level image when converted to binary level image thresh hold value should be – a) 120, b) 130, c) 370, d) cannot be said.
9.	If you have a very low contrast image which technique will you prefer more to improve the contrast – a) image multiplication with scalar number, b) contrast stretching, c) histogram equalization, d) negation.
10.	Operation used to separate back ground from fore ground is – a) enhancement, b) restoration, c) segmentation, d) image acquisition.
11.	Which filter will you use for the following image segment with noise? – a) low pass filter, b) high pass filter, c) band pass filter, d) image acquisition. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div>           3 3 5 7            3 200 4 4            1 4 4 6            5 5 4 6         </div> </div>
12.	Which filter will you use for the following image segment with noise? – a) low pass filter, b) high pass filter, c) band pass filter, d) image acquisition. <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div>           230 254 244 247            234 200 222 255            197 244 222 6            244 233 222 6         </div> </div>
13.	Triad is collection of – a) 2 color spots, b) 3 color spots, c) single color spots, d) 4 color spots.
14.	Which of the following technique will you use to ensharp your image which has been captured with blurriness – a) enhancement, b) restoration, c) segmentation, d) image acquisition.
15.	Which of the following technique will you use to de noise your image which has been captured with lots of noise – a) enhancement, b) filtering, c) segmentation, d) image acquisition.
16.	Which of the following technique/techniques is/are not associated in the following image <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;">  </div> <div>           – a) enhancement, b) filtering, c) segmentation, d) image acquisition.         </div> </div>





- a) gaussian, b) rayleigh, c) salt and pepper, d) unit.

18.

Which filter shall we use to restore the given image?



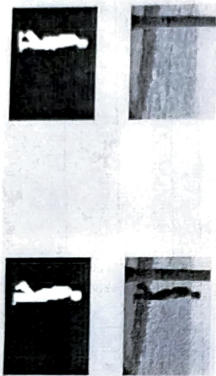
- a) median, b) average, c) inverse, d) high boost filter.

19. Which filter will work well on the given image?



- a) median, b) average, c) inverse, d) high boost filter.

20. Which operation should be done to get the following result?



- a) addition, b) subtraction, c) multiplication, d) negation.

Apply histogram equalization on the following image segment of 3 bits

- 3 3 5 7  
3 2 4 4  
1 4 4 6  
5 5 4 6

What new value shall we get for position (0,0) and (1,1) if we use median filter and also if you consider 0 padding is done before filtering?

- 3 3 5 7  
3 2 4 4  
1 4 4 6  
5 5 4 6