



**[02S01]**

- a. identical
- b. imaginary
- c. gray- level**
- d. complex

**17. For a fixed value of spatial resolution, the appearance of an image can be improved in many cases by using an adaptive scheme where the sampling process depends on the \_\_\_\_\_ of the image**

**[02S02]**

- a. Value
- b. immerge
- c. characteristics**
- d. origin

**18. The 4- diagonal neighbors of p have coordinate [02S03]**

- a. (x+1, y), (x+1, y+1), (x-1, y+1), (x-1, y-1)
- b. (x, y), (x+1, y-1), (x-1, y+1), (x-1, y-1)
- c. (x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1)**
- d. (x+1, y+1), (x, y), (x-1, y+1), (x-1, y-1)

**19. Connectivity is used to \_\_\_\_\_ of objects and components of regions in an image [02S04]**

- a. Establishing boundaries**
- b. destroy boundaries

- c. Find boundaries
- d. change boundaries

**20. For coordinate p(3,4) the 4- diagonal neighbors of p are \_\_\_\_\_ [02S05]**

- a. (3, 4) (4, 8) (3, 1) (2, 2)
- b. (4, 3) (4, 2) (2, 5) (2, 3)
- c. (4, 5) (4, 3) (2, 5) (2, 3)**
- d. (3, 5) (3, 3) (2, 5) (2, 3)

**21.  $D(p,q)=\sqrt{(x-s)^2+(y-t)^2}$  is the Euclidean \_\_\_\_\_ between \_\_\_\_\_**

**[03D01]**

- a. distance and p
- b. speed ,p and q
- c. speed, q and p
- d. distance, p and q**

**22. The Euclidean distance between p and q is defined as \_\_\_\_\_ [03D02]**

- a.  $D(p,q)=\sqrt{(x-s)^2+(y-t)^2}$
- b.  $D(p,q)=\sqrt{(x-s)^2+(y-t)^2}$
- c.  $D(p,q)=\sqrt{(x-s)^2+(y-t)^2}$**
- d.  $D(p,q)=\sqrt{(x-s)^2+(y-t)^2}$

**23. The city-block distance between p and q is defined as [03D03]**

- a.  $D(p,q)=\sqrt{|x-s|+|y-t|}$
- b.  $D(p,q)=|x-s|+|y-t|$**
- c.  $D(p,q)=|x-s|+|y-t|$

**d.  $D(p,q)=|x-s|+|y-t|$**

**24. A binary relation R over set A for all a, b in A, said to be reflexive if [03M01]**

- a. a R b
- b. b R a
- c. b R c
- d. a R a**

**25. A binary relation R over set A is said to be symmetric if for all a, b in A and [03M02]**

- a. b R b implies b R a
- b. a R b implies a R a
- c. a R b implies b R a**
- d. a R a implies a R b

**26. For coordinate p(2, 3) the 4 neighbors of pixel p are [03S01]**

- a. (3, 3) (2, 3) (1, 3) (2, 2)
- b. (3, 3) (2, 3) (1, 1) (2, 2)
- c. (3, 3) (2, 4) (1, 3) (2, 2)**
- d. (3, 3) (2, 4) (1, 3) (2, 1)

**27. Two pixels p and q with values from the set of gray level values are four connected , if q is in the set N (p) is known as [03S02]**

- a. 8-connectivity
- b. 4 - adjacent
- c. 4 - connectivity**
- d. 8- adjacent

**28. A binary relation R over set A is said to be transitive if for all a,b,c in A and \_\_\_\_\_ [03S03]**

- a. a R b and b R c implies a R c**
- b. a R a and b R b implies a R b
- c. a R b and b R a implies a R c
- d. a R a and b R c implies a R c

**29. Two pixels p and q with values from the set of gray-level values are 8-connected,**

**if q is in the set N (p) is known as [03S04]**

- a. 8-connectivity**
- b. 4 - adjacent
- c. 4- connectivity
- d. 8 -adjacent

**30. D distance is also called as [03S05]**

- a. city-block distance**
- b. chess-board distance
- c. Euclidean - distance
- d. mean- distance

**31. The chess - board distance between p and q is defined as [04D01]**

- a.  $D(p,q) = \min(|x-s|,|y-t|)$
- b.  $D(p,q) = \max(|x-s|,|y-t|)$**
- c.  $D(p,q) = \max(|x+s|,|y-t|)$
- d.  $D(p,q) = \max(|x-s|,|y+t|)$

**32. The principle logic operations used in an image processing are [04D02]**

- a. **AND,OR, compliment**
- b. greater, lesser
- c. greater, over
- d. less than or equal

**33. D distance is also called as [04M01] :**

- a. city-block distance
- b. **chess-board distance**
- c. Euclidean - distance
- d. mean- distance

**34. The principle uses of image multiplication is to correct [04M02]**

- a. **gray-level shading**
- b. noise reduction
- c. medical-imaging
- d. noise level shading

**35. Logic operations apply to [04M03]**

- a. **binary image**
- b. multivolume pixels
- c. unary image
- d. ternary image

**36. The D distance between two points p and q is equal to the length of the between these two points [04S01]**

- a. shortest 8-path
- b. shortest 2- path
- c. **shortest 4-path**
- d. shortest path

**37. Arithmetic and logic operation between pixels are used extensively in most branches of [04S02]**

- a. binary processing
- b. digital processing
- c. signal processing
- d. **image processing**

**38. Arithmetic operations on entire images are caused out [04S03]**

- a. word by word
- b. bit by bit
- c. **pixel by pixel**
- d. 2 pixels at a time

**39. The principle use of image addition is for image averaging to reduce [04S04]**

- a. threshold value
- b. frequency
- c. **noise**
- d. thickness

**40. Image subtraction is a basic tool in [04S05]**

- a. space imaging
- b. **medical- imaging**
- c. bionics
- d. general tool

**41. Basic transformations are developed to overcome the [05D01] problems**

- a. **image rotation, image scaling, image translation**
- b. image acquisition, image translation

- c. image transition, image rotation
- d. image detection, image translation

**42. Arithmetic - logic units in modern image processors are used to perform arithmetic & logic operations in**

- \_\_\_\_\_ [05D02]
- a. sequentially
- b. **parallel**
- c. randomly
- d. Serial

**43. Arithmetic operation apply to [05M01]**

- a. **binary image**
- b. multivolume pixels
- c. unary image
- d. ternary image

**44. Logic operation are basic tools in [05M02] processing**

- a. color image
- b. digital image
- c. signal
- d. **Binary image**

**45. Logic operation are basic in Binary image processing [05M03]**

- a. medical operations
- b. digital analog
- c. signal
- d. **tools**

**46. In addition to pixel by pixel processing an entire images, arithmetic and logical operations are used in [05S01]**

- a. adjacent-oriented
- b. connected oriented
- c. **Neighborhood oriented**
- d. control oriented

**47. The shape and meaning of the histogram are not affected by the [05S02] readings**

- a. **axis**
- b. origin
- c. horizontal axis
- d. vertical axis

**48. To rotate a point about another arbitrary point in space requires [05S03] number of transformations**

- a. 1
- b. 2
- c. **3**
- d. 4

**49. Neighborhood processing typically is formulated in the Context of so-called [05S04] operation**

- a. Logical
- b. unmask
- c. arithmetic
- d. **mask**

50. Applying a mask at each pixel location in an image is a computationally \_\_\_\_\_

\_\_\_\_\_ task [05S05]

- a. Expensive
- b. inexpensive
- c. difficult
- d. rays

51. Player A chooses  $y \in Y$  and player B chooses  $z \in Z$ , if player A loses, then he pays player B the amount \_\_\_\_\_ [06D01]

- a.  $L(z, y)$
- b.  $L(y, y)$
- c.  $L(z, z)$

d.  $L(y, z)$

52. A game  $G$  in the normal form is a triplet  $(y, z, L)$  where  $y$  and  $z$  are \_\_\_\_\_ [06M01]

- a. arbitrary spaces
- b. arbitrary functions
- c. bounded spaces
- d. constants

53. Player A \_\_\_\_\_ chooses and player B chooses \_\_\_\_\_ if player A loses, then he pays player B the amount  $L(y, z)$  [06M02]

- a.  $y, z \in Z$
- b.  $y \in Z, z \in Y$
- c.  $y, z \in Y$
- d.  $y \in Y, z \in Z$

54. The probabilities of \_\_\_\_\_ membership are calculated from Bayes theorem [06S01]

- a. object
- b. class
- c. unique
- d. method

55. Bayesian decision theory is the fundamental statistic approach to the problem of \_\_\_\_\_ classification [06S02]

- a. pattern
- b. identity
- c. general
- d. unique

56. The decision making process is analogous to a \_\_\_\_\_ game [06S03]

- a. statistical
- b. non statistical
- c. two - person zero sum
- d. non - zero sum

57.  $P(w = 1/4, P(x/w) = 1/3$  and  $p(x) = 1/2$  then  $p(w / x) =$  [07D01]

- a. 1/4
- b. 1/6
- c. 1/8
- d. 1

58. The multi variety normal density function is completely determined by [07D02]

- a.  $n + n_2(n + 1)$
- b.  $n + n/2$
- c.  $n + (n(n + 1)/2)$
- d.  $n_2 + 2$

59. \_\_\_\_\_ is the origin of the pattern classification algorithm [07M01]

- a. classifier
- b. Bionics
- c. end entity
- d. second entity

60. Player A choose  $z \in Z$  and player B chooses  $y \in Y$ , if player A wins, he receives the amount [07M02]

- a.  $L(y, z)$
- b.  $L(y, y)$
- c.  $L(z, z)$
- d.  $L(z, y)$

61. Bionics is the \_\_\_\_\_ of the pattern classification algorithm [07S01]

- a. middle
- b. origin
- c. end
- d. second

62. Each of the association units produces an output only if enough of the sensory unit, which are connected to it are [07S02]

- a. deactivated
- b. activated
- c. compensated
- d. uncompensated

63. A game  $G$  in the normal form is a triplet  $(Y, Z, L)$  where  $L$  is a \_\_\_\_\_ [07S03]

- a. bounded space
- b. arbitrary function
- c. bounded numerical function
- d. bounded string

64.  $p(x/c)$  is the conditional probability of obtaining feature value  $x$  given that the sample is from  $c$ . then  $p(x)$  is probability distribution for future  $x$  in the entire population and  $p(c)$  is the \_\_\_\_\_ that a random sample is a member of class  $c$ . [08D01]

- a. prior probability
- b. conditional probability
- c. profitability
- d. least probability

65. A game  $G$  in the normal form is a triplet  $(y, z, l)$ , where  $y$  and  $l$  are [08D02]

- a. arbitrary space, bounded space
- b. arbitrary space, arbitrary function
- c. bounded space, arbitrary function
- d. arbitrary space, bounded numerical function

66. The  $M$  by  $N$  matrix  $L=L$  with elements  $L = \dots$  s called pay-off or  $\dots$  loss matrix of game  $G$ . [08M01]

a.  $L_{ij}, Z_{ij}$  b.  $Y, Z_{ij}$  c.  $Y, Z_{ij}$

d.  $Y, Z_{ij}$  67. The nature selects class  $w$  and produces a pattern  $x$ . the probability that  $x$  comes from  $W_i$  is written as [08M02]

a.  $p(x/w)$   
b.  $p(w/x)$

c.  $p(w/x)$  d.  $p(w)$

68.  $p(w/x)=1/9; p(w)=1/3; p(x)=1/2$  now find  $p(x/w)$  using Bayes formula [08M03]

a.  $1/3$   
b.  $1/4$   
c.  $1/2$   
d.  $1/6$

69. ----- refers to choosing the most likely class, given the value of the feature [08S01]

a. Bayes classifier  
b. Bayes theory

c. Bayes decision making

d. Gradient theorem

70. ----- process is analogous to a two - person zero sum game [08S02]

a. Statistical  
b. Sensory  
c. Equal

d. Decision making

71. The classifier which ----- the total expected loss is called the Bayes classifier [08S03]

a. maximizes  
b. minimizes  
c. equalize  
d. remain same

72. Bionics is the application of biological concepts to ----- machines which are concerned with problems in animal and machine learning [08S04]

a. statistical  
b. electronic  
c. computing  
d. induction

73. The response of the perception is ----- to the weighted sum of the associative array responses [08S05]

a. inversely proportional  
b. equal

c. proportional  
d. not dependent

74. In Byes classifier for normal patterns, the decision function for class  $w$  may be

chosen as  $d(x) = \dots$  [09D01]

a.  $p(x/w)p(x)$

b.  $p(w/x)p(w)$  c.  $p(x/w)p(w)$  d.  $p(w)$

75. In Game  $G=(Y,Z,L)$ , if both  $Y$  and  $Z$  contain only a finite number of elements, then  $G$  is called ----- [09M01]

a. infinite  
b. finite  
c. unique set  
d. loop structure

76. The classifier which minimizes the total expected loss is called ----- classifier [09M02]

a. Bayes  
b. general  
c. unknown  
d. expected

77. The training algorithm for the perception machine is a simple scheme for the interactive determination of the ----- vector [09S01]

a. weight  
b. centroid  
c. Mass  
d. Linear

78. From a statistical point of view the bayes classifier represents the optimum measure of ----- [09S02]

a. performance  
b. probability  
c. risk  
d. loss

79. ----- machines is a natural and powerful model of machine learning [09S03]

a. Statistical

b. electronic

c. induction

d. preceptor

80. The perception algorithm converges in a ----- number of iterations, if the class under consideration are linearly separable [09S04]

a. equal  
b. finite  
c. infinite  
d. lesser

81. Player  $A$  chooses  $y \in Y$  and player  $B$  chooses  $z \in Z$ . If Player  $A$  looses, he ----- player  $B$  [09S05]

a. receive amount from  
b. pays amount to  
c. Does not do any transaction with  
d. Does not received

82.  $P(x/c)$  is the conditional probability of obtaining feature value -----

given that the sample belongs to class [10D01]

- a. x
- b. c,c
- c. x,x
- d. x,c

83. The sensory units are the means by which the machine \_\_\_\_\_ stimuli from its \_\_\_\_\_ environment [10D02]

- a. receive, internal
- b. send ,external
- c. receive, external
- d. send, internal

84. In bayes classification loss function may be expressed as  $L = 1-d$  where  $d = 1_{ij}$  when [10M01]

- a.  $i < j$
- b.  $i > j$
- c.  $i = j$
- d. i and j are constants

85. The best bayes classifier for normal patterns places a general \_\_\_\_\_ decision surface between each pair of paten classes [10M02]

- a. first - order
- b. third - order
- c. second-order
- d. next - order

86. One players loss is \_\_\_\_\_ in magnitude to the other players gain in a zero-sum game [10S01]

- a. less
- b. greater
- c. equal
- d. not decided

87. In the fixed \_\_\_\_\_ correction algorithm ,correction increment constant greater than [10S02]

- a. 1
- b. 2
- c. 0
- d. 4

88. \_\_\_\_\_ the algorithm occurs when a wait vector classifies all patterns correctly [10S03]

- a. fixed correction
- b. absolute correction
- c. bayes

d. convergence

89. \_\_\_\_\_ algorithm requires that the starting weight vector be differ from zero [10S04]

- a. bayes
- b. fixed correction
- c. absolute correction
- d. fractional correction

90. The \_\_\_\_\_ schemes provide a tool for finding the minimum of a

function [10S05]

- a. minimizes
- b. maximizes
- c. gradient
- d. does not change

91. The histogram of digital image with gray levels is a discrete function  $P(r) = n/n$ .The no of pixels in the image with that gray level is [11D01]  $n_k$

- a.  $r_k$
- b.  $n_k$
- c. n
- d.  $r_n$

92. As all gray levels occur toward the middle of the gray scale, the image would appear as [11D02]

- a. light gray with high contrast
- b. murky gray
- c. murky gray with low contrast
- d. light gray with low contrast

93. Histogram processing  $P(r)$  gives an estimate of \_\_\_\_\_ of gray level  $r_k$  [11M01]

- a. probability of occurrence
- b. probability of failure
- c. probability of coincidence
- d. probability of mutual exclusion

94. A plot of histogram processing  $P(r)$  function all values of K provides a \_\_\_\_\_ k \_\_\_\_\_ description of the appearance image [11M02]

- a. normal
- b. global
- c. local
- d. formal

95. The final histogram with significant speed, corresponding to an image with \_\_\_\_\_ contrast [11M03]

- a. high
- b. low
- c. moderate
- d. unequal

96. The image enhancement techniques by considering processing methods that are bagged only on the intensity of \_\_\_\_\_ pixels [11S01]

- a. single
- b. double
- c. half
- d. Tribute

97. The idea behind contrast stretching is to \_\_\_\_\_ dynamic range of gray levels in image processing [11S02]

- a. increase
- b. decrease
- c. neither increase nor decrease
- d. no change



98. The thresholding fusion creates \_\_\_\_\_ image [11S03]

- a. unary
- b. ternary
- c. binary**
- d. n-nary

99. The dynamic range of processed image \_\_\_\_\_ the capability of display device [11S04]

- a. far exceeds**
- b. not exceeds
- c. just exceeds
- d. no change

100. The histogram transformation function is used to map the gray level of the pixel in the Neighborhood [12D01]

- a. cornered
- b. centered**
- c. in between cornered
- d. near to centered

101. Histogram transformation function is also called as [12M01]

- a. histogram equalization**
- b. histogram computation
- c. histogram quantization
- d. histogram non equalization

102. In the local histogram processing, only one new row or column of neighborhood changes during a \_\_\_\_\_ translation of the region [12M02]

- a. column to row
- b. pixel to row
- c. column to pixel
- d. pixel to pixel**

103. Updating the histogram obtained in \_\_\_\_\_ introduced at each motion step is possible [12M03]

- a. present location with old data
- b. previous location with old data
- c. previous location with new data**
- d. present location with new data

104. The advantage of histogram equalization over manual contrast manipulation techniques is that the former is [12M04]

- a. Partially automatic
- b. partially manual
- c. fully automatic**
- d. fully manual

105. The cumulative distribution at  $r$  produces an image whose gray levels have \_\_\_\_\_ density [12S01]

- a. uniform**
- b. no uniform
- c. distributed
- d. no distributed

106. The histogram techniques are easily adoptable to \_\_\_\_\_ enhancement

[12S02]

- a. global
- b. normal
- c. local**
- d. anywhere

107. The local histogram processing is advantage over computing the histogram over all pixels in the neighborhood region each time the region moved \_\_\_\_\_ pixel location [12S03]

- a. 1**
- b. 2
- c. 3
- d. 4

108. The undesirable checker board effect is produced when reduce the computation is to utilize \_\_\_\_\_ Regions [12S04]

- a. non overlapping**
- b. overlapping
- c. opposite
- d. nearest

109. The measure of average brightness and variance is measure of [12S05]

- a. contrast**
- b. intensity
- c. image processing
- d. local enhancement

110. The histogram specification, the desired image levels could be equalized by the transformation function is [13D01]

- a.**
- b.
- c.
- d.

111. If an noisy image  $g(x,y)$  is formed by using  $M$  different noisy images, the  $g(x,y)$  is [13D02]

- a.**
- b.
- c.
- d.

112. The spatial filtering is opposed to \_\_\_\_\_ filtering using the Fourier transform [13M01]

- a. time- domain
- b. frequency domain**
- c. complex-domain
- d. minimal-domain

113. The objective of image averaging is to \_\_\_\_\_ the noise effects by \_\_\_\_\_ a set of noisy images [13M02]

- a. reduce, adding**
- b. increase, adding
- c. reduce, removing
- d. increase, removing

114. Low contrast images can result from [13M03]

- a. poor illumination, wrong setting of aperture
- b. wrong setting of aperture, lack of dynamic range in the imaging sensor

c. wrong setting of aperture, poor illumination  
**d. poor illumination, wrong setting of aperture, lack of dynamic range in the imaging sensor**

**115. The histogram equalization method does not lend itself to \_\_\_\_\_ application [13S01]**

- a. non Local enhancement
- b. reverse image enhancement
- c. unique enhancement
- d. local enhancement**

**116. The histogram equalization method is capable of generating only an approximation to \_\_\_\_\_ histogram [13S02]**

- a. uniform**
- b. no uniform
- c. continues
- d. discontinues

**117. The method of histogram specification function involves \_\_\_\_\_ transformation functions. [13S03]**

- a. 1
- b. 2**
- c. 3

d. 4  
**118. Noise image formed by the \_\_\_\_\_ of noise to an original image [13S04]**

- a. Removal
- b. addition**
- c. no change
- d. depend on image

**119. An effective way to compress the dynamic range of pixel values to perform the following intensity transformation is useful [14D01]**

- a.
- b.
- c.
- d.**

**120. The condition,  $0 \leq T(r) \leq 1$  for  $0 \leq r \leq 1$  [14D02]**

- a. guarantees a mapping that is consistent with the allowed range of pixel values**
- b. preserves the order from black to white in the gray value
- c. guarantees a mapping that is inconsistent with the allowed range of pixel values
- d. the order from white to black in the gray value

**121.  $P(r)$  = probability density function with  $r$  levels =  $\{-2r+2 \ 0 \leq r \leq 1 \ 0 \text{ else where}\}$  probability density function of 's' in the  $0 \leq s \leq 1$  range given by [14D03]**

- a. 1**
- b. -1
- c. 0
- d. -2

**122. The condition,  $T(r)$  is single valued and monotonically increasing in the interval  $0 \leq r \leq 1$  preserves [14M01]**

- a. guarantees a mapping that is consistent with the allowed range of pixel values
- b. the order from black to white in the gray value**

- c. guarantees a mapping that is inconsistent with the allowed range of pixel values
- d. the order from white to black in the gray value

**123. If all gray levels occurs towards the middle of the gray scale, the image would appear [14S01]**

- a. turkey gray
- b. Murky gray**
- c. David gray
- d. chunky gray

**124. Advantage of histogram equalization over manual contrast manipulation techniques in that the former is \_\_\_\_\_ [14S02]**

- a. fully automatic**
- b. updating easy
- c. analyzing easy
- d. easy to use

**125. Disadvantage of histogram equalization over histogram on specification is [14S03]**

- a. fully automatic
- b. does not lend itself to interactive image enhancement applications**
- c. flexible
- d. lend itself to interactive image enhancement applications

**126. Median filters are \_\_\_\_\_ [14S04]**

- a. linear
- b. nonlinear**
- c. active
- d. passive

**127. The image differentiation magnitude to (mag) given by [15D01]**

- a.
- b.
- c.

d.

**128. Lowpass filter transfer function of  $n$  order is given by  $H(u,v) = \text{cutoff frequency locus at a distance of } D \text{ from [15D02]}$**

- a.  $1/1 - [D(u,v)/D]^{2n}$
- o b.  $1/1 + [D(u,v)/D]^{2n}$
- o C.  $1/1 + [D(u,v)/D]^n$



o d.  $1/1-[D(u,v)/D]_n$

**129.If noise pattern consists of strong spike like components which filter is used [15M01]**

- a. median filter
- b. low pass spatial filtering
- c. neighborhood averaging method
- d. high pass spatial filtering

**130.If member of gray levels are 16 and with 256 samples true then number of bits required [15M02]**

- a.  $256 * 256 * 16$
- b.  $256 * 128 * 16$
- c.  $256 * 8 * 128$
- d.  $128 * 128 * 32$

**131.Low pass spatial filter have [15S01]**

- a. +ve coefficients
- b. -ve coefficients
- c. neutral
- d. no coefficients

**132.Low pass spatial filters also called [15S02]**

- a. neighborhood averaging method
- b. median filter
- c. general method
- d. butter worth

**133.High pass filters are attenuate or eliminate [15S03]**

- a. high frequency components
- b. low frequency components
- c. no frequency
- d. any frequency components

**134.Low pass filters are attenuate or eliminate [15S04]**

- a. high frequency components
- b. low frequency components
- c. no frequency
- d. any frequency components

**135.A classic application for enhancement is in the area of medical imaging called [15S05]**

- a. bright mode radiography
- b. dark mode radiography
- c. mask mode radiography
- d. light mode radiography

**136.The different noisy images are increases the viability of the pixel values of each location (x,y) [15S06]**

- a. increases
- b. increase and then decreases
- c. decreases and the increases
- d. decreases

15

**137.The DFT is that function f(x) is discredited into a sequence by taking 'N' sample units apart [16D01]**

- a.  $x - x$
- b.  $x$
- c.  $x + x$
- d.  $x$

**138.The DFT function for  $x=0,1,2, N$  then the is [16D02]**

- a.  $1/N x$
- b.  $x/1 x$
- c.  $N x$
- d.  $x$

**139.Edges and other abrupt changes in gray levels are associated with [16M01]**

- a. low frequency components
- b. high frequency components
- c. medium frequency components

d. ideal frequency components

**140.A classic application for enhancement is in the \_\_\_\_\_ of medical imaging called mask mode radiography . [16M02]**

- a. volume
- b. cube
- c. area
- d. surface area

**141.changes in gray levels are associated with high frequency components [16M03]**

- a. corner
- b. Edges and other abrupt
- c. center
- d. size

**142.The histogram equalization method does not lend itself to \_\_\_\_\_ application [16S01]**

- a. Local enhancement
- b. image enhancement
- c. interactive enhancement
- d. reverse local enhancement

**143.The Discrete Fourier transfer function is a \_\_\_\_\_ function [16S02]**

- a. continuous
- b. discrete
- c. discontinuous
- d. loop

**144.The DFT function for  $x=0,1,2, N$  then the , , , , , , , , , is  $1/N x$  [16S03]**

- a.
- b.  $N$
- c.  $x$
- d.  $x/N$

**145.The Separability property is obtained by successive applications of \_\_\_\_\_ [16S04]**

- a. 1-DFT or its inverse
- b. 2-DFT or its inverse
- c. 3-DFT or its inverse
- d. any DFT

146. In the translation property, the visual examination of transform is usually limited to display of its \_\_\_\_\_ [16S05]

- a. angle
- b. magnitude**
- c. volume
- d. area

147. The average value of the 2-D discrete function is [17D01]

- a.
- b.
- c.
- d.

148. The Laplacian of two variable function  $f(x,y)$  defined as [17D02]

- a.
- b.
- c.
- d.

149. Consider 2-FT relationships that constitute a basic link between the spatial and frequency domains. These relationships called \_\_\_\_\_ and \_\_\_\_\_ [17M01]

- a. correlation, spatial convolution
- b. convolution, correlation**
- c. spatial convolution, spatial correlation
- d. spatial correlation, spatial convolution

150.  $f(x, y) = \frac{1}{N} \sum f(x,y)$  is the average value of the \_\_\_\_\_ discrete function is [17M02]

- a. 2-D**
- b. 3-D
- c. 1-D
- d. n-D

151. The DFT and its \_\_\_\_\_ are periodic with period N [17S01]

- a. equal
- b. Inverse**
- c. proportional
- d. not have any relation

152. In the periodicity properties of the FT, Fourier spectrum shows \_\_\_\_\_ periods in interval  $[0, n-1]$  [17S02]

- a. back-to-back half**
- b. back-to-back-full
- c. back-to-back double
- d. back-to-back triple

153. In the periodicity properties of FT, the shifted spectrum showing a \_\_\_\_\_ period in the same interval [17S03]

- a. full
- b. half**
- c. double
- d. terrible

154. The individual periods of the convolution will overlap, a phenomenon commonly [17S04]

- a. wrap around**
- b. rounding off
- c. convection
- d. truncate

155. In the equation if correlation if  $f(x)$  and  $g(x)$  are the same function is usually called and  $f(x)$  and  $g(x)$  are different function is called [18D01]

- a. cross correlation, auto correlation
- b. auto correlation, cross correlation**
- c. auto correlation, common correlation
- d. narrow correlation, auto correlation

156. "Whittaker-Shanoy sampling theorem" is a complete recovery of band-limited function from samples where spacing satisfies [18M01]

- a.
- b.
- c.
- d.

157. Application correlation in Image processing is [18S01]

- a. prototype matching, closest match between unknown image and known image**
- b. prototype matching, no match between unknown image and known image
- c. prototype matching, closest match between unknown image and prototype image
- d. match between similar image

158. Sampling can be represented by \_\_\_\_\_ an impulse train with the function of interest [18S02]

- a. multiplying**
- b. differentiating
- c. integrating
- d. dividing

159. The array formed by Walsh transformation kernel is a \_\_\_\_\_ matrix having \_\_\_\_\_ rows and columns [18S03]

- a. symmetric, orthogonal**
- b. asymmetric, orthogonal
- c. symmetric, polygonal
- d. asymmetric, polygonal

160. The elements of hadmard matrix are derived from the [18S04]

- a. kernel values**
- b. by normalizing the hadmard matrix
- c. sequence of that hadmard columns
- d. sequence of that hadmard rows

161. The principal objective of sharpening is \_\_\_\_\_ live defining in an image [18S05]

- a. neglect

b. highlight

c. weakening

d. strengthen

**162. The method which is one of the basic tools function image processing applications in printing and publishing industry [19D01]**

a. sharp marking

b. unsharp marking

c. spatial marking

d. gradient marking

**163. The transfer function of BLPE of order  $n$  and with cut off frequency locus at difference do from origin is defined by [19D02]**

a.  $H(u,v) = 1/[1 + h(D(u,v)/D_0)^n]$

b.

c.  $H(u,v) = 1/[1 + h(D(u,v)/D_0)^2]$

d.

**164. High pass spatial filter eliminates the \_\_\_\_\_ term [19M01]**

a. zero-frequency

b. high-boost-frequency

c. average-frequency

d. low frequency

**165. Enhancement frequency domain is compute the Fourier transform of image and multiply the result by filter transfer function and take \_\_\_\_\_ the produce enhanced image [19M02]**

a. Fourier transfer

b. inverse transfer

c. filter transfer

d. Laplace

**166. For an ideal low pass filter characteristic section, the point of transition between  $H(u,v)=1$  and  $H(u,v)=0$  often called [19M03]**

a. saturated frequency

b. cut in frequency

c. cut off frequency

d. unsaturated frequency

**167. Redirecting the average value of an image to zero implies that the image must have some \_\_\_\_\_ levels [19S01]**

a. negative gray

b. positive gray

c. zero gray

d. infinite

**168. Unsharp marking is the process of a \_\_\_\_\_ blurred image from original [19S02]**

a. adding

b. multiplying

c. subtracting

d. dividing

**169. The blurring is achieved in frequency domain by attenuating or specified range of**

**components function transform of given image [19S03]**

a. high frequency

b. low frequency

c. band frequency

d. in equal frequency

**170. The filter transfer function that affect the real and imaginary parts of Fourier transform of image to be smoothed in exactly the same manner. The filters referred as [19S04]**

a. zero-phase shift filters

b. 30-phase shift filters

c. 60-phase shift filters

d. 90-phase shift filters

**171. In ideal filters indicates all frequencies outside the circle are \_\_\_\_\_ [19S05]**

a. No attenuation

b. complete attenuated

c. partially attenuated

d. varies attenuation

**172. The high pass filtering process attenuates the \_\_\_\_\_ components without disturbing information in the Fourier transform [20D01]**

a. low frequency, high frequency

b. High frequency, low frequency

c. low frequency, low frequency

d. high frequency, high frequency

**173. The image sharpening can be achieved in frequency domain by \_\_\_\_\_ process [20M01]**

a. low pass filtering

b. high pass filtering

c. Butterworth filtering

d. low pass and high pass

**174. Ideal high pass filter is completely opposite to \_\_\_\_\_ filters [20M02]**

a. ideal low pass

b. ideal Butterworth

c. ideal band pass

d. any ideal filters

**175. In the enhancement in the frequency domain we compute \_\_\_\_\_ of the image to be enhanced [20M03]**

a. integral

b. Fourier transformation

c. differential

d. Laplace transformation

**176. The zero phase shift filters are [20S01]**

a. radically asymmetric

b. uniformly asymmetric

177. In the enhancement in the frequency domain we perform \_\_\_\_\_ transform to produce the enhanced image [20S02]

- a. inverse
- b. Fourier
- c. Laplace
- d. differential

178. The \_\_\_\_\_ distance between p and q is defined as [20S03]

- a. hexagon
- b. general
- c. **Euclidean**
- d. hypothetical

179. The final histogram with significant \_\_\_\_\_ corresponding to an image with high contrast [20S04]

- a. **speed**
- b. volume
- c. area
- d. value

180. The \_\_\_\_\_ property is obtained by successive applications of 1-DFT or its inverse. [20S05]

- a. **Separability**
- b. Normalization
- c. unique
- d. non separable