**Department of Computer Science**

**Class: T. Y. B. Sc. (CS)**

**Semester: VI**

**Subject: Digital Image Processing**

**Sample Questions**

**Multiple Choice Questions**

1. The spatial coordinates of a digital image (x,y) are proportional to:
2. Position
3. Brightness
4. Contrast
5. Noise
6. Among the following image processing techniques which is fast, precise and flexible.
7. Optical
8. Digital
9. Electronic
10. Photographic
11. An image is considered to be a function of a(x,y), where a represents:
12. Height of image
13. Width of image
14. Amplitude of image
15. Resolution of image
16. What is pixel?
17. Pixel is the elements of a digital image
18. Pixel is the elements of an analog image
19. Pixel is the cluster of a digital image
20. Pixel is the cluster of an analog image
21. The range of values spanned by the gray scale is called:
22. Dynamic range
23. Band range
24. Peak range
25. Resolution range
26. Which means the assigning meaning to a recognized object.
27. Interpretation
28. Recognition
29. Acquisition
30. Segmentation
31. The number of grey values are integer powers of:
32. 4
33. 2
34. 8
35. 1
36. What is the first and foremost step in Image Processing?
37. Image restoration
38. Image enhancement
39. Image acquisition
40. Segmentation
41. What is the next step in image processing after compression?
42. Wavelets
43. Segmentation
44. Representation and description
45. Morphological processing
46. What is the step that is performed before color image processing in image processing?
47. Wavelets and multi resolution processing
48. Image enhancement
49. Image restoration
50. Image acquisition
51. How many number of steps are involved in image processing?
52. 10
53. 9
54. 11
55. 12
56. What is the expanded form of JPEG?
57. Joint Photographic Expansion Group
58. Joint Photographic Experts Group
59. Joint Photographs Expansion Group
60. Joint Photographic Expanded Group
61. To convert a continuous sensed data into Digital form, which of the following is required?
62. Sampling
63. Quantization
64. Both Sampling and Quantization
65. Neither Sampling nor Quantization
66. For a continuous image f(x, y), how could be Sampling defined?
67. Digitizing the coordinate values
68. Digitizing the amplitude values
69. Coordinates
70. Amplitude
71. For a continuous image f(x, y), Quantization is defined as
72. Digitizing the coordinate values
73. Digitizing the amplitude values
74. Coordinates
75. Amplitude
76. How is sampling accomplished when a sensing array is used for image acquisition?
77. The number of sensors in the strip establishes the sampling limitations in one image direction and Mechanical motion in the other direction
78. The number of sensors in the sensing array defines the limits of sampling in both directions
79. The number of mechanical increments at which we activate the sensor to collect data
80. only Mechanical motion in the other direction
81. A continuous image is digitised at \_\_\_\_\_\_\_ points.
82. Random
83. Vertex
84. Contour
85. Sampling
86. The transition between continuous values of the image function and its digital equivalent is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_
87. Quantisation
88. Sampling
89. Blurring
90. Rasterisation
91. Images quantised with insufficient brightness levels will lead to the occurrence of \_\_\_\_\_\_\_\_\_\_
92. Pixillation
93. Blurring
94. False Contours
95. Sampling
96. The smallest discernible change in intensity level is called \_\_\_\_\_\_\_\_\_\_\_\_
97. Intensity Resolution
98. Contour
99. Saturation
100. Contrast
101. What is the tool used in tasks such as zooming, shrinking, rotating, etc.?
102. Sampling
103. Interpolation
104. Filters
105. Quantisation
106. Dynamic range of imaging system is a ratio where the upper limit is determined by
107. Saturation
108. Noise
109. Brightness
110. Contrast
111. For Dynamic range ratio the lower limit is determined by
112. Saturation
113. Noise
114. Brightness
115. Contrast
116. The most familiar single sensor used for Image Acquisition is
117. Microdensitometer
118. Photodiode
119. CMOS
120. IDTS
121. A geometry consisting of in-line arrangement of sensors for image acquisition
122. A photodiode
123. Sensor strips
124. Sensor arrays
125. CMOS
126. The difference is intensity between the highest and the lowest intensity levels in an image is \_\_\_\_\_\_\_\_\_\_\_
127. Saturation
128. Noise
129. Brightness
130. Contrast
131. In the Visible spectrum the \_\_\_\_\_\_ colour has the maximum wavelength.
132. Violet
133. Blue
134. Red
135. Yellow
136. How many categories does the color image processing is basically divided into?
137. 4
138. 2
139. 3
140. 5
141. What are the names of categories of color image processing?
142. Full-color and pseudo-color processing
143. Half-color and full-color processing
144. Half-color and pseudo-color processing
145. Pseudo-color and Multi-color processing
146. What are the basic quantities that are used to describe the quality of a chromatic light source?
147. Radiance, brightness and wavelength
148. Brightness and luminence
149. Radiance, brightness and luminence
150. Luminence and radiance
151. What are the characteristics that are used to distinguish one color from the other?
152. Brightness, Hue and Saturation
153. Hue, Brightness and Intensity
154. Saturation, Hue
155. Brightness, Saturation and Intensity
156. What are the characteristics that are taken together in chromaticity?
157. Saturation and Brightness
158. Hue and Saturation
159. Hue and Brightness
160. Saturation, Hue and Brightness
161. What is the name of area of the triangle in C.I E chromatic diagram that shows a typical range of colors produced by RGB monitors?
162. Color gamut
163. Tricolor
164. Color game
165. Chromatic colors
166. Color model is also named as (another name):
167. Color space
168. Color gap
169. Color space & color system
170. Color system
171. How many bit RGB color image is represented by full-color image?
172. 32-bit RGB color image
173. 24-bit RGB color image
174. 16-bit RGB color image
175. 8-bit RGB color image
176. What is the equation used to obtain S component of each RGB pixel in RGB color format?
177. S=1+3/(R+G+B) [min⁡(R,G,B)].
178. S=1+3/(R+G+B) [max⁡(R,G,B)].
179. S=1-3/(R+G+B) [max⁡(R,G,B)].
180. S=1-3/(R+G+B) [min⁡(R,G,B)].
181. What is the equation used to obtain I(Intensity) component of each RGB pixel in RGB color format?
182. I=1/2(R+G+B)
183. I=1/3(R+G+B)
184. I=1/3(R-G-B)
185. I=1/3(R-G+B)
186. What is the equation used for obtaining R value in terms of HSI components?
187. R=I[1-(S cos⁡H)/cos⁡(60°-H) ].
188. R=I[1+(S cos⁡H)/cos(120°-H)].
189. R=I[1+(S cos⁡H)/cos⁡(60°-H) ].
190. R=I[1+(S cos⁡H)/cos(30°-H) ].
191. What is the equation used for calculating B value in terms of HSI components?
192. B=I(1+S)
193. B=S(1-I)
194. B=S(1+I)
195. B=I(1-S)
196. What is the equation used for calculating G value in terms of HSI components?
197. G=3I-(R+B)
198. G=3I+(R+B)
199. G=3I-(R-B)
200. G=2I-(R+B)
201. Which of the following color models are used for color printing?
202. RGB
203. CMY
204. CMYK
205. CMY and CMYK
206. What is Digital Image Processing?
207. It’s an application that alters digital videos
208. It’s a software that allows altering digital pictures
209. It’s a system that manipulates digital medias
210. It’s a machine that allows altering digital images
211. Which of the following process helps in Image enhancement?
212. Digital Image Processing
213. Analog Image Processing
214. Both a and b
215. Sampling
216. Which of the following is not an example of Digital Image Processing?
217. Computer Graphics
218. Pixel
219. Camera Mechanism
220. Ram
221. How does picture formation in the eye vary from image formation in a camera?
222. Fixed focal length
223. Varying distance between lens and imaging plane
224. No difference
225. Variable focal length
226. Which of the following is the first and foremost step in Image Processing?
227. Image acquisition
228. Segmentation
229. Image enhancement
230. Image restoration
231. Which of the following image processing approaches is the fastest, most accurate, and flexible?
232. Photographic
233. Electronic
234. Digital
235. Optical
236. \_\_\_\_\_\_\_\_\_\_\_ determines the quality of a digital image.
237. The discrete gray levels
238. The number of samples
239. discrete gray levels & number of samples
240. discrete TC
241. Which of the following tool is used in tasks such as zooming, shrinking, rotating, etc.?
Filters
Sampling
Interpolation
Quantization
242. The effect caused by the use of an insufficient number of \_\_\_\_\_levels in smooth areas of a digital image False Contouring
243. Intensity
244. Interpolation
245. Gaussian smooth
246. Contouring
247. What is the procedure done on a digital image to alter the values of its individual pixels known as?
248. Geometric Spacial Transformation
249. Single Pixel Operation
250. Image Registration
251. Neighbourhood Operations
252. \_\_\_\_\_\_\_\_\_\_\_ is a commercial use of Image Subtraction.
253. MRI scan
254. CT scan
255. Mask mode radiography
256. Xray
257. Approaches to image processing that work directly on the pixels of incoming image work in \_\_\_\_\_\_\_\_\_\_\_\_
258. Spatial domain
259. Inverse transformation
260. Encode
261. Transform domain
262. Which of the following in an image can be removed by using a smoothing filter?
263. Sharp transitions of brightness levels
264. Sharp transitions of gray levels
265. Smooth transitions of gray levels
266. Smooth transitions of brightness levels
267. Region of Interest (ROI) operations is generally known as \_\_\_\_\_\_\_
268. Masking
269. Dilation
270. Shading correction
271. Erosion
272. Which of the following filter’s responses is based on the pixels ranking?
273. Sharpening filters
274. Nonlinear smoothing filters
275. Geometric mean filter
276. Linear smoothing filters
277. Which of the following operation is done on the pixels in sharpening the image, in the spatial domain?
278. Differentiation
279. Median
280. Integration
281. Average
282. \_\_\_\_\_\_\_\_ is the principle objective of Sharpening, to highlight transitions.
283. Brightness
284. Pixel density
285. Composure
286. Intensity
287. \_\_\_\_\_\_ enhance Image Differentiation?
288. Pixel Density
289. Contours
290. Edges
291. Lines
292. . Which of the following fact is correct for an image?
293. An image is the multiplication of illumination and reflectance component
294. An image is the subtraction of reflectance component from illumination component
295. An image is the subtraction of illumination component from reflectance component
296. An image is the addition of illumination and reflectance component
297. \_\_\_\_\_\_\_ is the process of moving a filter mask over the image and computing the sum of products at each location.
298. Nonlinear spatial filtering
299. Convolution
300. Correlation
301. Linear spatial filtering
302. Which side of the greyscale is the components of the histogram concentrated in a dark image?
303. Medium
304. Low
305. Evenly distributed
306. High
307. Dark images are usually Enhancement using \_\_\_\_\_\_\_\_\_.
308. Blurring
309. Contrast adjustment
310. Image enhancement
311. Sharping
312. Which of the following is the expansion of PDF, in uniform PDF?
313. Probability Density Function
314. Previously Derived Function
315. Post Derivation Function
316. Portable Document Format
317. \_\_\_\_\_\_\_\_\_\_\_\_ filter is known as averaging filters.
318. Bandpass
319. Low pass
320. High pass
321. Bandwidth pass
322. Low pass filter is known as \_\_\_\_\_filters.
323. Averaging
324. Sampling
325. System
326. Data
327. The response for linear spatial filtering is given by the relationship \_\_\_\_\_\_\_\_\_\_
328. Difference of filter coefficient’s product and corresponding image pixel under filter mask
329. Product of filter coefficient’s product and corresponding image pixel under filter mask
330. Sum of filter coefficient’s product and corresponding image pixel under filter mask
331. image pixel under filter mask
332. The filter order of a Butterworth lowpass filter determines whether it is a very sharp or extremely smooth filter function, or an intermediate filter function. Which of the following filters does the filter approach if the parameter value is very high?
333. Gaussian lowpass filter
334. Ideal lowpass filter
335. Gaussian & Ideal lowpass filters
336. lowpass filter
337. Gamma Correction is defined as \_\_\_\_\_\_\_\_\_\_
338. Light brightness variation
339. A Power-law response phenomenon
340. Inverted Intensity curve
341. lowpass filter
342. \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is known as the highlighting the contribution made to total image by specific bits instead of highlighting intensity-level changes.
343. Bit-plane slicing
344. Intensity Highlighting
345. Byte-Slicing
346. Negative transformation
347. Which gray-level transformation increases the dynamic range of gray-level in the image?
348. Negative transformations
349. Contrast stretching
350. Power-law transformations
351. Byte-slicing
352. A special case of nearest neighbor Interpolation that just duplicates the pixels the number of times to achieve the desired size, is known as \_\_\_\_\_\_\_\_\_\_\_
353. Bilinear Interpolation
354. Contouring
355. Ridging
356. Pixel Replication
357. Row-column deletion method of Image Shrinking is an equivalent process to which method of Zooming?
358. Bilinear Interpolation
359. Contouring
360. Pixel Replication
361. There is no such equivalent process
362. \_\_\_\_\_has an undesirable feature, that is Aliasing effect
363. Image Shrinking
364. False contouring effect
365. Ridging effect
366. Checkerboard effect
367. A pixel p at coordinates (x, y) has neighbors whose coordinates are given by:
(x+1, y), (x-1, y), (x, y+1), (x, y-1)
This set of pixels is called \_\_\_\_\_\_\_\_\_\_\_\_
368. 4-neighbors of p
369. Diagonal neighbors
370. 8-neighbors
371. Central
372. A pixel p at coordinates (x, y) has neighbors whose coordinates are given by:
(x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1)
This set of pixels is called \_\_\_\_\_\_\_\_\_\_\_\_
373. 4-neighbors of p
374. Diagonal neighbors
375. 8-neighbors
376. Central
377. What is the set of pixels of 8-neighbors of pixel p at coordinates (x, y)?
378. (x+1, y), (x-1, y), (x, y+1), (x, y-1), (x+2, y), (x-2, y), (x, y+2), (x, y-2)
379. (x+1, y), (x-1, y), (x, y+1), (x, y-1), (x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1)
380. (x+1, y+1), (x+1, y-1), (x-1, y+1), (x-1, y-1), (x+2, y+2), (x+2, y-2), (x-2, y+2), (x-2, y-2)
381. (x+2, y), (x-2, y), (x, y+2), (x, y-2), (x+2, y+2), (x+2, y-2), (x-2, y+2), (x-2, y-2)
382. What is the method that is used to generate a processed image that have a specified histogram?
383. Histogram linearization
384. Histogram equalization
385. Histogram matching
386. Histogram processing
387. Highlighting a specific range of intensities of an image is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_
388. Intensity Matching
389. Intensity Highlighting
390. Intensity Slicing
391. Intensity level
392. \_\_\_\_is a collection of nonlinear processes.
393. Filter images
394. Edges
395. Mathematical morphology
396. Skelatonise
397. \_\_\_\_\_having only two gray level constitute an important subset of digital image.
398. Edges
399. Binary image
400. Color image
401. Image coloring
402. Image segmentation refers to the process of portioning an image into groups of \_\_\_\_
403. Pixels
404. Edges
405. Region
406. Segment
407. A\_\_\_\_ algorithm is used in which weak edges are dissolved and strong edges are left intact
408. Region-growing
409. Region –merging
410. Region –boundaries
411. Region –centre
412. \_\_\_\_\_\_\_in an image are a group of connected pixels with similar properties.
413. Pixels
414. Edges
415. Region
416. Segment
417. \_\_\_\_\_\_images are comprised of an enormous amount of data.
418. Pixels
419. Analog
420. Digital
421. Mapped
422. Reduction in the size of the image data for both \_\_\_\_\_ and transmission of digital image
423. Region
424. Segment
425. Edges
426. Storing
427. Redundancy means\_\_\_\_
428. Mapping
429. Duplication
430. Reduction
431. Deletion
432. The source coder and decoder pair is commonly referred as\_\_\_\_\_ module.
433. Channel codec
434. Source codec
435. Coder codec
436. Decoder codec
437. The channel coder and decoder pair is commonly referred as\_\_\_\_\_ module.
438. Channel codec
439. Source codec
440. Coder codec
441. Decoder codec
442. RLC stands for\_\_\_\_
443. Run-line coding
444. Run-line channel
445. Run-length coding
446. Run-length channel
447. \_\_\_\_\_\_\_are extensively used in image processing and image analysis.
448. Image enhancement
449. Image compression
450. Image segmentation
451. Image transforms
452. Transforms allow us to \_\_\_more relevant information.
453. Load
454. Extract
455. Transform
456. Clean
457. A \_\_\_\_\_ is a function of one or more variables.
458. Signal
459. Segmentation
460. Compression
461. System
462. A one dimensional signal is an\_\_\_\_\_ signal
463. DTC
464. ECG
465. GCC
466. COM
467. \_\_\_\_\_digital filters of the non-recursive type.
468. DIR
469. IIR
470. FIR
471. IRI
472. \_\_\_\_\_digital filters of the recursive type.
473. DIR
474. IIR
475. FIR
476. IRI
477. FIR stands for\_\_\_\_
478. First impulse response
479. Finite impulse result
480. Finite impulse response
481. Finite input response
482. When photons hit the retina they give rise to \_\_\_\_\_which on reaching the brain are translated into color.
483. Finite impulse
484. Infinite impulse
485. photons impulse
486. Electric impulse
487. \_\_\_\_\_ represents dominant colour as perceived by an observed.
488. Intensity
489. Hue
490. Saturation
491. HIS
492. \_\_\_\_\_\_\_refers to the relative purity or amount of white light mixed with a \_\_\_
493. Saturation, Hue
494. Intensity, Hue
495. Hue, Intensity
496. Saturation, Intensity