Assignment 1

The due date for submitting this assignment has passed.

Due on 2021-02-03, 23:59 IST.

As per our records you have not submitted this assignment.

1) Of the following, _____ has the maximum frequency. *1 point*

- a. UV Rays
- b. Gamma Rays
- c. Microwaves
- d. Radio Waves

No, the answer is incorrect.
Score: 0
Accepted Answers:
b. Gamma Rays

2) The difference in intensity between the highest and the lowest intensity levels in an image is _____ *1 point*

- a) Noise
- b) Saturation
- c) Contrast
- d) Brightness

No, the answer is incorrect.
Score: 0
Accepted Answers:
c) Contrast

3) Images quantized with insufficient brightness levels will lead to the occurrence of _____ *1 point*

- a) Pixilation
- b) Blurring
- c) False Contours
- d) None of the Mentioned

No, the answer is incorrect.
Score: 0
Accepted Answers:
c) False Contours

4) What is the phenomenon one encounters when a lens fails to converge all the wavelength of light on a single focal plane? *1 point*

- a. Vignetting effect.
- b. Chromatic aberration.
- c. Non-collinear vanishing points.
- d. Distorted image.

No, the answer is incorrect.
Score: 0
Accepted Answers:
b. Chromatic aberration.

5) Gray values of an image are *1 point*

i. proportional to scene radiance and foreshortening factor.
ii. inversely related to the distance between the object and the lens.
iii. inversely proportional to the distance between the lens and the image plane.
iv. proportional to total irradiance and unaffected by foreshortening factor.

- (a) (i) and (iii)
- (b) Only (iv)
- (c)(ii) and (iv)
- (d) (iii) and (iv)

No, the answer is incorrect.
Score: 0
Accepted Answers:
(a) (i) and (iii)

6) In computer vision, the purpose of prepossessing is used for *1 point*

- a) Store image as array of pixel
- b) Convert analog information of light information into digital form.
- c) Remove noise from the image.
- d) Obtain a distinction between object and background.

No, the answer is incorrect.
Score: 0
Accepted Answers:
c) Remove noise from the image.

7) Brightness of a Lambertian surface is indicated by *1 point*

- a) BRDF, which is constant, and 1/π times of reflectance coefficient.
- b) BRDF, which changes according to the outgoing radiance.
- c) BRDF, which varies inversely to changes in reflectance coefficient.
- d) none of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
a) BRDF, which is constant, and 1/π times of reflectance coefficient.

8) Your night light has a radiant flux of 10 watts, what is the irradiance on your radiometry notes which fell 2 meters from the light when you fell asleep (assuming your notes were perpendicular to the night light)? (Wm^{-2}) *1 point*

- a) 0.299
- b) 0.25
- c) 0.199
- d) 0.55

No, the answer is incorrect.
Score: 0
Accepted Answers:
c) 0.199

9) Given the 5-watt source coming in from $\frac{2\pi}{3}$ solid angle (in sr) of a radius 3 meter, the corresponding source of energy carried by the ray is *1 point*

- $a) \frac{5}{4\pi^2}$
- $b) \frac{1}{2\pi^2}$
- $c) \pi^2$
- d) 1

No, the answer is incorrect.
Score: 0
Accepted Answers:
$a) \frac{5}{4\pi^2}$

10) If you have a sensor with a responsivity of 2 V W^{-1} , an output of 5 volts, is 1 cm on a side, and is 10 cm from a source, determine the radiant intensity of the source. *1 point*

- $a) 200 W sr^{-1}$
- $b) 225 W sr^{-1}$
- $c) 250 W sr^{-1}$
- $d) 222 W sr^{-1}$

No, the answer is incorrect.
Score: 0
Accepted Answers:
$c) 250 W sr^{-1}$