

SELECTED QUESTIONS FROM ALL CHAPTERS

QUESTIONS

2. A spectral eye sensitivity curve for mesopic vision depends on the _____, the decrease of which reduces the percentage participation of the retina's receptors called the _____.
7. The only photometric quantity which represents a measure for the visual impression intensity is _____ of the observed object surface. It depends on both _____.

ANSWERS

2. average luminance in the field of view; cones
7. luminance; the luminous flux falling on the object surface and its reflection properties

QUESTIONS

2. What does our impression of the object colour depend on?
4. The calculation of the general colour rendering index of a light source is based on the determination of _____.

ANSWERS

2. Our impression of the object colour predominantly depends on the spectral power distribution of the light source illuminating the object and the absorptance curve of the object surface. It also depends on our past experience, the state of our visual system and the luminance and colour of the immediate surroundings.
4. an average colour shift for the eight CIE standard test colours, obtained when they are illuminated by the tested light source and the reference illuminant, both having (approximately) the same (correlated) colour temperature, as well as taking into account the chromatic adaptation of the eye

QUESTIONS

1. Is the light source luminous efficacy a photometric or a physical quantity?
13. A sports arena is illuminated by ordinary metal-halide luminaires. Can its standby secondary lighting be realised by connecting a number of these luminaires not only to the mains, but also to a diesel aggregate?

ANSWERS

1. Photometric (it represents a ratio between the light source luminous flux, which is a photometric quantity, and its active power, which is a physical quantity).
13. No, because the restrike time of metal-halide lamps is up to 10 minutes.

QUESTIONS

1. What are the principal optical parts of a closed luminaire?
3. What is the basic role of polar diagrams?

ANSWERS

1. Reflector (lenses in case of LED luminaires) and outer optical cover.
3. They provide visual information about the luminaire light distribution.

QUESTIONS

10. The cheapest and simplest solution for the replacement of HPS lamps inadequately applied for the illumination of spaces characterised by dense pedestrian traffic is the use of _____ (they use the same _____ as HPS lamps).
16. In addition to lower cost, the three main advantages of the luminous flux control when using LED luminaires compared to the control of HPS luminaires are: _____, _____ and _____.

ANSWERS

10. metal-halide lamps with a ceramic discharge tube; control gear (ballast)
16. a higher percentage reduction in power for the same percentage reduction in luminous flux; almost instant change of the luminous flux; the colour of light of LEDs practically remains constant, while the yellowish component becomes more dominant in the colour of light of HPS lamps when decreasing their luminous flux

QUESTIONS

11. What is the role of local lighting (luminaires set on the facade) as opposed to floodlighting?
22. Which lighting concept is most adequate for extremely long bridges?

ANSWERS

11. Local lighting emphasises a single element or detail, creating a contrast between the illuminated element and the surrounding surface. Floodlighting assumes reflectors set at a distance, which are intended to illuminate large surfaces and soothe strong contrasts.
22. Rhythmical lighting. In cases of extremely long bridges it will reduce monotony and light pollution when compared to continuous illumination.

QUESTIONS

7. What is a common problem regarding the illumination of large open urban squares?
11. What is the hierarchy among the parts of a statue in human form that needs to be respected in the process of lighting design?

ANSWERS

7. There is a conflict between the need to illuminate a large surface and the fact that poles might have a negative effect on the daytime appearance of open spaces.
11. The most important part of a statue in human form is the face (its expression needs to be comprehensible), followed by the rest of the front side. The back side is least important.

QUESTIONS

9. The three basic criteria for the determination of the boundaries of the city zones distinguished within the lighting masterplan are:
 - _____,
 - _____, and
 - _____.
16. Possession of a _____, which should contain the essential information on all relevant elements of urban lighting, significantly facilitates urban lighting maintenance. An improved solution is the development of a _____.

ANSWERS

9. configuration of the terrain; architecture; urban function
16. database; geographic information system (GIS)