

Marks Scored:

KATHMANDU UNIVERSITY
End Semester Examination
July/August, 2017

Level : B.E.
Year : IV

Course : EPEG 414
Semester : II

Exam Roll No. : Time : 30 mins.

F. M. : 10

Registration No. :

Date : AUG 25 2017

SECTION "A"

[20 Q. × 0.5 = 10 marks]

Choose most appropriate answer.

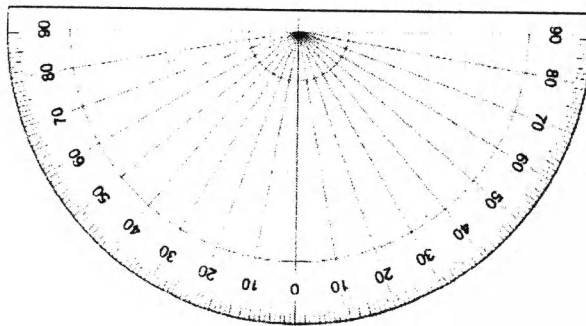
1. CIE CRI use _____ colour space.
a. CIE LAB colour space b. CIE U*V*W* colour space
c. CIELUV colour space d. CIE colour appearance model
2. In CIE XYZ trichromatic system the tristimulus values X, Y, Z are 37.2, 31.3 and 14.5 respectively, determine the chromaticity coordinates x and y.
a. 0.5897 and 0.3766 b. 0.3766 and 0.1254
c. 0.4487 and 0.3766 d. 0
3. Which of the following codes of CIE gives standard for calculation of interior lighting: applied method?
a. CIE 52-1982 b. CIE 117-1995 c. CIE 123-1997 d. CIE 55-1983
4. 500 lumens from a light source falls into table of 1 m², illuminance is _____ lx.
a. 250 b. 500 c. 1000 d. 2000
5. Which of the following is *not* true for luminance?
a. Describes brightness of a surface.
b. Describes density of light.
c. Revels amount of light reaching the surface.
d. Luminance and differences in luminance is perceived by human eye.
6. Which of the following institution has developed standard for measuring LED lumen depreciation (LM 80)?
a. CIE b. ASSIST c. IESNA d. Energy Star
7. View angle of LED lamp is defined as _____.
a. Angle at which peak luminous intensity is observed.
b. Angle at which half of peak luminous intensity is observed.
c. Twice the angel at which peak luminous intensity is observed.
d. Twice the angel at which half of peak luminous intensity is observed.
8. Two light sources A and B emit 1 Watt radiation, source A radiates on wavelength of 555 nm and source B on wavelength of 683 nm, which one gives more light?
a. Source A b. Source B c. Both same d. Both invisible

9. Luminous flux of a LED lamp is measured using _____.
- a. Illuminance meter
 - b. Integrating sphere
 - c. Luminance meter
 - d. Lux meter
10. Proper thermal management is necessary in LED system to _____.
- a. increase light output
 - b. prevent LLD
 - c. stabilize junction temperature
 - d. all the above
11. Glare may result from _____.
- a. Excessive lighting contrast in the field of vision
 - b. Excessive luminance
 - c. both a and b
 - d. None of the above
12. Indirect lighting system _____.
- a. distributes lighting directly on the task area
 - b. is the most efficient way to illuminate a room
 - c. makes the space psychologically smaller
 - d. creates comfortable low contrast soft light
13. Which of the following LED lamp driver has highest efficiency?
- a. Resistive ballast
 - b. Transistor based linear regulator
 - c. IC based linear regulator
 - d. Switching regulator
14. In scotopic conditions, human eye is most sensitive for wavelength of _____ nm.
- a. 380
 - b. 510
 - c. 555
 - d. 760
15. What is the advantage of OLED over solid state LED?
- a. It is intense than LED.
 - b. It is concentrated than LED.
 - c. It is diffuse than LED.
 - d. It is cheaper than LED for same lumen output.
16. In making LED luminaire, MCPCB is preferred over FR-4 type PCB because _____.
- a. it is cheaper
 - b. it is durable
 - c. it has good electrical contact with LED
 - d. it has good heat conduction property
17. Which of the following lamp has property like black body radiation?
- a. Phosphor converted LED.
 - b. Tungsten halogen lamp.
 - c. Induction lamp.
 - d. Compact fluorescent lamp.
18. What is the prime concern in the design of high power LED driver _____.
- a. constant voltage
 - b. constant current
 - c. EMC
 - d. power factor

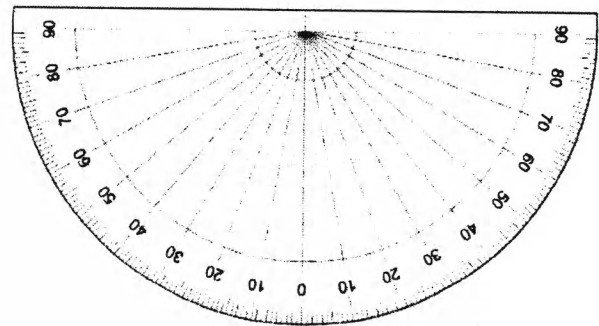
19. The special color rendering indices are defined as $R_i = 100 - 4.6\Delta E_i$, where ΔE_i is color difference between color coordinates determined for the CIE test color sample illuminated by the test and reference illuminant, i refers to the CIE test sample number. Calculate the CIE CRI or general color rendering of test light source using ΔE_i given in the table below.

i	1	2	3	4	5	6	7	8
ΔE_i	8	1	18	12	4	6	5	2

- a. 67.8 b. 75.2 c. 54.9 d. 56.9
20. Draw conical and batwing angular illumination distribution pattern of commercial light source.



Conical



Batwing

