

Name :

Roll No. :

Invigilator's Signature :

**CS/M.TECH (MCP)/SEM-2/MCP-201/2013
2013**

**PRINCIPLES OF COLOUR MANAGEMENT &
COMMUNICATION**

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP - A

(Multiple Choice Type Questions)

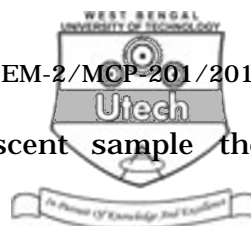
1. Choose the correct alternatives for the following :

10 × 1 = 10

- i) An illuminant is
- a) just a light source
 - b) just an idealised light source
 - c) a theoretical source defined by numbers
 - d) a manmade light source.



- ii) The colour attributes in Munsell system are
 - a) hue, lightness, chroma
 - b) hue, value, saturation
 - c) hue, value, chroma
 - d) colour content, black content, white content.
- iii) When two colours have same tristimulus values the colours will look
 - a) alive under certain conditions
 - b) always alike
 - c) not necessarily alike
 - d) never alike.
- iv) Which one of the following are the Psychometric parameters ?
 - a) X, Y, Z values
 - b) Y, x, y values
 - c) L^*, a^*, b^* values
 - d) L^*, c^*, h values.
- v) Which one of the following is additive function ?
 - a) Reflectance
 - b) Kubelka-Munk
 - c) Transmittance
 - d) Scattering coefficients.
- vi) Human eye is sensitive to light
 - a) equally at all visible wavelengths
 - b) most sensitive to red zone
 - c) most sensitive to blue zone
 - d) most sensitive at 555 nm.
- vii) Which one of the following is not a colour difference equation ?
 - a) CIELUV
 - b) Kubelka-Munk
 - c) CMC ($1 : c$)
 - d) CIE 2000.



- viii) For colour measurement of fluorescent sample the instrument should be based on
- Direct optics
 - Reverse optics
 - Bidirectional geometry
 - Diffuse geometry.
- ix) Plot of u/s values vs concentration of dyes for textiles is usually
- linear
 - non-linear
 - no definite trend
 - not related with concentration.
- x) Beer and Lambert's laws enable us to measure
- colour by reflectance
 - colour by scattering
 - colour by transmission
 - transmission only, no colour.

GROUP - B

(Short Answer Type Questions)

Write short notes on any *three* of the following.

$$3 \times 5 = 15$$

- Additive and subtractive mixing.
- Beer and Lambert's laws.
- Munsell colour order system.
- Metamerism.
- CIELAB colour space.
- Standard observer functions.



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

8. State various components of human eye with respect to visual perception. How does human colour vision become colour defective ? Describe various types of colour defective vision.
9. What are colour order systems ? Describe merits and demerits of such systems. Name various colour order systems. Describe Munsell colour order system.
10. What are meant by tristimulus values ? How are these calculated from reflectance data ? Describe chromaticity diagram, dominant wavelength and excitation purity.
11. Why is measurement of colour difference more important than the measurement of actual colour in textile and other colouration industries ? Name a few existing colour difference formulae. Describe one colour difference formula which is popular in textile industries.
12. Describe Kubelka-Munk theory in brief. Why are u/s values called additive function and how is it utilised in colorimetry ? Describe briefly vector addition method for calculation of unknown concentrations to match a colour sample.

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