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 : $10 \times 1 = 10$

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 Psyclometric 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 (l : c) d) CIE 2000.

viii) For colour measurement of fluorescent sample the instrument should be based on

a) Direct optics b) Reverse optics

c) Bidirectional geometry d) Diffuse geometry.

ix) Plot of u/s values *vs* concentration of dyes for textiles is usually

a) linear

b) non-linear

c) no definitetrend

d) not related with concentration.

x) Beer and Lambert's laws enable us to measure

a) colour by reflectance

b) colour by scattering

c) colour by transmission

d) transmission only, no colour.

GROUP – B

(Short Answer Type Questions)

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

3 × 5 = 15

2. Additive and subtractive mixing.
3. Beer and Lambert's laws.
4. Munsell colour order system.
5. Metamerism.
6. CIELAB colour space.
7. Standard observer functions.

GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. 3 × 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 vaious 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 wavelengh 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.