THE TEXTILE ASSOCIATION (INDIA)
A.T.A. (REVISED) EXAMINATION – 2015
PART III – PAPER A3.OC
WET PROCESSING–I PRETREATMENT & DYEING

Date: 25.12.2015 Marks: 100 Time: 10 am to 1 pm

Instructions:
1. Attempt SIX questions out of which Q1 is compulsory
2. Answer each next question on new page
3. Figure to the right indicate full marks
4. Illustrate your answers with sketches and flow chart wherever necessary
5. Use of non programmable electronic pocket calculator permissible
6. Mobile and any other communication devices are not allowed in exam hall.
7. Assume suitable data wherever necessary

Q1 Answer the following questions in brief (Any ten) 20 Marks

a. What is object of grey fabric inspection?

b. What are demerits of plate singeing machine?

c. Which impurities in cotton are removed in scouring?

d. Explain meaning of OBA.

e. Define: i. % shade ii. Exhaustion of dye

f. What is function of heat exchanger in jet dyeing machine?

g. Give reason: Direct dyes have poor fastness properties.

h. What is reductive and oxidative bleaching of wool?

i. Write two names of machines used for garment processing.

j. Fill in the blanks-
   Reactive dye forms—— bond with cotton, acid dye forms—— bond with silk.

k. Say true or false. If false write correct statement-
   i. Vat dyes are insoluble in water.
   ii. Disperse dyes are dyed in alkaline pH.

l. Select from the bracket to complete following pairs-
   Peroxide bleaching —
   Sodium chlorite bleaching —
   (Formic acid, Soda ash, Sulphuric acid, Caustic soda)

Q2

a. Draw a neat and labeled diagram of Gas singeing machine. 05

b. Explain the after treatments to improve wash fastness of direct dyes. 05

c. Explain important steps in dyeing of reactive dyes on cotton. 06

Q3

a. Explain dyeing of fabric in winch dyeing machine. 05

b. Describe bleaching of polyester with sodium chlorite. 05

c. What are different types of enzymes used for enzymatic desizing? 06
Q4  a. Solve following numerical calculations-
   3.6 Kg dye is taken for dyeing of 150 Kg of fabric? What is % shade dyed on
   fabric?
   (Actual calculation is necessary. Do not write just answer.)
   b. What is process of dyeing mineral khaki on cotton?
   c. Explain principles of optical whitening agent.

Q5  a. Describe continuous scouring in J box
   b. With following data calculate amount of liquor, dyes, salt, soda ash in
      reactive dyeing-
      Weight of yarn – 235 Kg, MLR – 1:6
      Recipe: Reactive Yellow dye – 1.3 %
      Reactive Red dye – 0.7 %
      Salt – 60 g/l
      Soda ash – 20 g/l
      (Actual calculation is necessary. Do not write just answer.)
   c. What are conditions of pH and temperature for bleaching of cotton with
      sodium hypochlorite? Give chemical reaction of hypochlorite in bleaching.

Q6  a. Describe process of HTHP dyeing of polyester with disperse dyes.
   b. What are damages occurred in over bleaching of cotton with peroxide?
   c. Explain standard method of rubbing fastness of dyed material.

Q7  a. Explain process of scouring and bleaching of Polyester/ Cotton blended
   fabric.
   b. How will you check desizing efficiency?
   c. Explain method of calculating % Expression in padding method of dyeing.
      What is the effect of mangle pressure on % expression?

Q8  a. Explain with diagram why OBA treated material looks more white.
   b. Explain dyeing of silk with metal complex dyes.
   c. What is the principle difference in following machines-
      i. Jigger dyeing machine ii. Jet dyeing machine

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