QUESTION PAPER FOR THE RECRUITMENT OF TECHNICAL ASSISTANT
TA-02-UR-CHEMICAL ENGINEERING PILOT PLANT

PART C **Total Marks: 50 Marks**

1. Determine the density of a given NaCl solution using specific gravity bottle method and report the value in kg/m^3. **(10 Marks)**

2. (A) An air-water vapour mixture at 101.3 kPa has a dry bulb temperature of 110^{0}F and is 50% saturated with water vapour. Determine the absolute humidity, relative humidity and dew point using the given psychrometric chart. **(6 Marks)**

(B) Note the Dry Bulb Temperature and Wet Bulb Temperature of the room using the given thermometer and report the value in ^{o}F. **(4 Marks)**

3. Carry out the batch sedimentation test of a given $Caco_3$ solution (25gms in 500 ml) and determine the settling velocity by plotting the graph between height of interface in cm and time in sec. **(10 Marks)**

4. (A) Prepare 1N solution from the given NaOH pellets. **(5 Marks)**

(B) Note down the pressure indicated by the pressure gauge in the CO_2 cylinder in Psi and report the value in kPa and in mm Hg. **(5 Marks)**

5. A single effect evaporator concentrating weak liquor containing 5% solids to 55% solids (by weight) is fed with 6000 kg/hr of weak liquor.

Calculate the following: **(10Marks)**

(i) Amount (in kg) of water evaporated per hour.

(ii) Mass flow rate of the thick liquor.

(iii) Volumetric flow rate if the density of thick liquor is 1300 kg/m^3.

Scheme of Valuation for the post of Technical Assistant- TA 02

PART C

1. Noting the weight and reporting the value of density in gm/ml. (5 Marks)
   For conversion into kg/m^3. (5 Marks)

2. (A)For finding Absolute humidity(1 Mark)
   For finding relative humidity (4 Marks)
   For finding Dew point (1 Mark)
   (B)For noting dry bulb temperature (1 Mark)
   For finding wet bulb temperature (1 Mark)
   For conversion into Degree Fahrenheit (2 Mark)

3. For carrying out sedimentation test (4 Marks)
   For plotting the graph (2 Marks)
   For finding the settling velocity (4 Marks)

4. (A)For preparing 1N NaoH solution(5 Marks)
   (B)For noting the pressure in the gauge (1 Mark)
   For conversion into in kPa and in mm Hg.(4 Marks)

5. For calculating amount of water evaporated(5 Marks)
   For finding Mass flow rate (2 Marks)
   For finding Volumetric flow rate (3 Marks)

160403

HORTICULTURE

Part C

SKILL TEST FOR HORTICULTURE FOR THE TECHNICAL ASSISTANT POST

Time : 2 hrs **Total Marks: 50**

1. Identify the following specimens and list the uses in landscape/ horticulture point of view with propagation method A, B, C, D, E, F, G, H, I, J,	10 marks
2. Work out the straight fertiliser requirement in the form of urea, single super phosphate and muriate of potash for grownup coconut tree(NPK 560 g: 320 g: 1200g/ TREE)in one hectare area with spacing of 7.5 m	10 marks
3. Write the procedure for preparation of Neem Seed Kernel Extract preparation 5% spray and work out quantity of neem seed required for one acre spray volume of 60 litre	10 marks
4. Write procedure for ground layering with examples and demonstrate with given specimen	10 marks
5. Write procedure for protray production of vegetable seedling/flower seeds and demonstrate with given specimen	10 marks

Central Leather Research Institute (CLRI), Chennai

Trade Test for Technical Assistant (TA 08)

****

Part C: (Practical) Attend either 1 or 2 or 3 or 4 as applicable

Duration: 60 minutes **1 x 50 = 50 marks**

1. (i). Fabricate the leather garment, with the patterns and materials given **(40 marks)**
   (ii).Write down the procedure of the product fabricated **(10 marks).**

Or

2. (i). Fabricate the small leather goods using the patterns and materials given **(40 marks)**
   (ii).Write the procedure **(10 marks).**

Or

3. (i). Fabricate the Footwear upper using the patterns and materials given **(40 marks)**
   (ii). Write down the procedure **(10 marks).**

Or

4. (i). Demonstrate the testing of Tensile strength and Tongue Tear strength in Universal Testing Machine using the leather samples given **(40 marks)**
   (ii). Write down the procedure **(10 marks).**

****

181105

26

Post: Technical Assistant

TA-11-UR Tannery

Part-C

Answer ALL Questions (5 x 10 = 50 marks)

Time: 1 hr **Max Marks: 50**

1. Identify the given leathers based on the grain character.

2. For the exhibited leathers, identify the type of defects (antimortem or postmortem) and also name the defect.

3. For the exhibited material, write a suitable process for processing into wetblue from the present stage. Write the precautions to be taken.

4. For the given swatch of finished leather samples, identify the type of finish. Write a suitable finishing outline for any one of the sample.

5. Handle the displayed leather, which has loose belly and shank. How can we improve the tightness and fullness in order to increase the cuttability?