INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI, GADAG/SPKM IIHT, VENKATAGIRI

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST SEMESTER (BACK PAPER) EXAMINATION – APRIL-MAY, 2015.

1.1 ENGLISH

Time: 3 Hours   Max.Marks: 80

The question paper has two parts. Answers to Part A should be written in the question paper itself and Part B in the Answer Book.

PART-A (Marks:60)
GRAMMAR

I.A Say whether the following items sentences or not.   (5x½=2½)

1. The girl wearing a red frock   _____
2. The boy learnt his lessons.   _____
3. The clerks who came late to the office.   _____
4. Many birds were seen on the tree.   _____
5. On seeing her mother coming.   _____

B Say what kind of sentence each one is   (5x½=2½)

1. She came home yesterday.   _____
2. Why does she cry all the time?   _____
3. Lawrence is my cousin.   _____
4. Oh! What a good smell!   _____
5. Are you writing something?   _____

C. Divide the following sentences into subject and predicate with a stroke /   (5x½=2½)

1. My friend sold his car.
2. Honesty is the policy.
3. The cunning fox cheated the lion
4. The owner of the house and her friends were ready to go out.
5. Some naughty boys were teasing the strangers.

II.A. Underline the nouns in the following sentences: (5x½=2½)

1. Sukanya sings well.
2. I saw a bird yesterday.
3. She lived in a big house.
4. He attended the party.
5. My friends met me.

1

B. Fill in the blanks with the plural of the word given in bracket: (5x½=2½)
1. _____(baby) cry for milk.
2. _____(Piano) are sold here.
3. _____(box) are sold here.
4. We saw many_____(monkey) on the tree.
5. _____(sheep) are grassing in the meadows.

III.A Underline the pronouns in the following sentences: (5x½=2½)

1. She is a good dancer.
2. Boys took their bags and went home.
3. This is the most beautiful flower.
4. Somebody entered the room
5. Did you tell your brother?

B. Fill the blanks with correct relative pronouns(who, whose, which, whom, where):
(5x½=2½)

1. The lady _____hand bag is stolen went to the police station.
2. The man_____met her was her brother.
3. The dog_____we saw belongs to my friend.
4. The boy_____you met yesterday is my brother.
5. I can't remember the place_____I kept my bag.

IV.A Pick out the adjectives in the following sentences: (5x½=2½)
1. Salem is hot in summer. _____
2. People should grow shady trees. _____
3. Remya has two children. _____
4. We should drink enough water. _____
5. Few students like to work hard. _____

B. Fill the blanks with the correct adjectives choosing from the given list. (5x½=2½)
(every, interesting, ferocious, several, huge)

1. I read an_____novel.
2. They cut down _____tree.
3. _____books are kept on the table.
4. _____man has his own umbrella.
5. Tiger is a _____animal.

V.A. Use the given verbs in the right place. (5x½=2½)
(is, are, was, were)

1. Every one _____happy in the class room.
2. We_____playing in the ground.

2

3. Her aunty _____ working in Chennai last year.
4. Yesterday we _____ in the theatre.
5. Neither Kumar nor his friend _____ waiting now.

B. Change the tense of the verb as instructed.   5x ½ =2 ½
1. We went to school. (into simple present)

_____

2. She knows the answer. (into simple past)

_____

3. Rajieve and Jayanth exercise regularly. (into past continuous)

_____

4. David saw the picture. (into past perfect)

_____

5. The gardener looked after the garden well. (into present continuous)

C. Pick out the verbs in the following sentences.   5x ½ =2 ½
1. My friend bought a computer.   _____
2. I heard the train enter the platform. _____
3. Mohan went to his house.   _____
4. The hunter aimed at the bird.   _____
5. The teacher was teaching in the class. _____

D. Change the following into passive voice.   5x ½ =2 ½
1. She bought the pen.

_____

2. The teacher taught grammar.

_____

3. I wrote a letter yesterday.

_____

4. The birds drank water from the tub.

_____

5. She has received a parcel.

_____

VI. A. Underline the adverbs in the following sentences.   5x ½ = 2 ½
1. Government decided to change the pattern of education last year
2. The chief guest spoke loudly.
3. He ran fast to catch the train.
4. We lived there.
5. I met her again

3

B. Fill the blanks with the correct adverb choosing from the list given in the box. (5x½=2½)

| happily; | cruelly; | tenderly; | wisely; | strongly |

1. The MLA_____recommended my friend for the job.
2. The child came to her grandmother's house_____
3. The giant killed the king_____
4. Our Prime Minister replied_____to the questions of the interviewer.
5. The mother took care of the child_____.

VII. Combine the sentences with proper conjunction. (5x½=2½)

1. He ran fast. He was late

2. The children danced. The piper played.

3. Preeti is pretty. She is not proud.

4. I make a promise. I keep it.

5. I'll take an umbrella. It's raining.

VII.A. Fill the blanks with proper indefinite article (a / an) (5x½=2½)
1. I saw_____big dog on the way.
2. John is working in_____University.
3. We have been waiting in this station for_____hour.
4. We respect_____honest man.
5. She went to_____hospital because she was sick.

B. Insert article 'the' if needed. If not, write 'x' in the blank. (5x½=2½)

1. _____earth goes round_____sun.
2. _____water taken from this well is used for_____agriculture.
3. What did you have for_____breakfast?

IX. Fill the blanks with proper preposition.   5 x ½ = 2 ½
1. The lion moved _____ night.
2. She was born _____ July 4th.
3. She met me _____ December.
4. It rained _____ two hours.
5. I have a meeting _____ 9 am.

X. Say whether the sentence is simple/compound/complex.   5 x ½ = 2 ½
1. Because of rain the match was cancelled.   _____
2. He came back home carrying a bundle of sticks.   _____
3. The gardener watered the plants and they grew well.   _____
4. When he was young he was very strong.   _____
5. He ran to the station but he missed the train.   _____

VOCABULARY

XI. A. Fill the blanks choosing a word from the list given. 5x ½ = 2 ½

fragment,;   grace;   depicted;   ancient;   vibrant

In the (1)_____ time many artists (2) _____ the picture of their way of life. One could see (3) _____ in these pictures. They were done with (4) _____ colours.
These days we see the (5) _____ of such pictures many broken walls.

B. Give the best meaning of the underlined word selecting from the following options.
          5x ½ =2 ½

1. Khadi was among the **prevalent** materials at that point of time.

a. love;   b. common c. hate d. support   _____

2. They had added grace to the overall piece of fabric with **intricate** designs.

a. beautiful   b. simple   c. complicated   d. convenient   _____

3. The Kashmiri shawl is the most **cherished** acquisition of a lady.

a. likeable   b. costly   c. cheap   d. bad   _____

4. And he took a **leap** from one side of the well to the other.

a. care   b. breath   c. help   d. jump   _____

5. Handloom sector has been gaining **significance** since the ancient time.

a. growth   b. sign   c. importance d. beauty   _____

C. Select the opposite of the given word from the options given.   5x ½ =2 ½

1 . PRIOR

    a. efficient   b. before   c. lazy   d. after   _____

2. ENHANCE

    a. dull   b. decrease   c. increase   d. bright   _____

3. WARMTH

    a. heat   b. combine   c. cold   d. similarity   _____

4. CEASE

    a. begin   b. give   c. divide   d. stop   _____

5. BRILLIANCE

    a. sinking   b. dull   c. splendour d. development _____

D. Write down the opposites of the given words.   5x ½ =2 ½

1. intact x   _____

2. proud x   _____

3. fine   x   _____

4. rich   x   _____

5. found x   _____

PART B (Marks: 20)

I. Write any one of the letters given below.   10

    1. Write a letter to your friend asking him to visit your place during summer vacation.

    2. Write letter to a sports firm ordering some sports items.

II. Read the following passage and answer the questions given below.   10

One day a rich merchant lost his purse. So he made it known that it contained two thousand rupees. He offered half of the money to anyone who found it. Now it so happened that a workman found the purse and brought it to the merchant. Then the merchant began to feel sorry that he promised to give away half his money. So he decided to pretend that there had been a precious jewel in the purse – as well as his money."I won't give you the reward," he told the workman. "There was a precious jewel in the purse. I'll give you the thousand rupees only if you return my jewel."The workman went to the court. The judge said to the merchant, "You say there were two thousand rupees and a jewel in your purse. But in this purse there is no jewel. Let the workman keep the purse until its owner can be found. You wait till some finds your purse."The merchant stopped arguing and gave the workman his reward of one thousand rupees.

Questions:

    1. How much did the merchant lose?

    2. How much did the merchant promise to give the finder of the purse?

    3. Why did he feel sorry?

    4. Why did the workman go to the court?

    5. What was the judgement?

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
I SEMESTER EXAMINATION – APRIL/MAY 2015

1.2 APPLIED MATHEMATICS

TIME: 3 Hours   Max. Marks: 80

PART – A

I.   Answer the following questions.   (2x10=20)

(a) Find x if $\begin{vmatrix} 2 & 4 \\ -1 & x \end{vmatrix} = 0$

(b) If $A = \begin{bmatrix} 0 & 2 & 3 \\ 2 & 1 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 7 & 6 & 3 \\ 1 & 4 & 5 \end{bmatrix}$ Find A+B

(c) Find the value of $\dfrac{\tan 25 + \tan 20}{1 - \tan 25 \tan 20}$

(d) If $A + B + C = 180$ find the value of $\sin(A+B)$

(e) If $y = 7x^3 - e^x + \log x$, find $\dfrac{dy}{dx}$

(f) Differentiate e^{2x} with respect to x

(g) Evaluate : $\int \dfrac{1}{x}\, dx$

(h) Evaluate : $\int \sin 10x\, dx$

(i) Find the distance between the points P(-6,7) and Q (-1,-5)

(j) Find the median of the following data

21, 24, 27, 30, 32, 34, 35, 38, 48

PART – B

Answer the following questions:

II.   (a) Show that

$$\begin{vmatrix} 1 & 1 & 1 \\ x & y & z \\ x^2 & y^2 & z^2 \end{vmatrix} = (x-y)(y-z)(z-x)$$

(4)

(b)   Solve the following simultaneous equations using Crammer's rule.

$$7x + 3y - 4z = 6$$
$$2x - 5y + 6z = 3$$
$$x + y + 2z = 4$$

(8)

OR

(c) If $A = \begin{bmatrix} 2 & 3 \\ 0 & 1 \end{bmatrix}$, $B = \begin{bmatrix} 3 & 4 \\ 2 & 1 \end{bmatrix}$ then verify that $(A+B)^T = A^T + B^T$

(4)

(d) Find the inverse of the Matrix $\begin{bmatrix} 1 & 1 & -1 \\ 2 & 1 & 0 \\ -1 & 2 & 3 \end{bmatrix}$

(8)

III.   (a) Prove that $\dfrac{Cos\,(A+B)}{Cos\,A\,Cos\,B} = 1 - \tan A \tan B$

(4)

(b) Show that $\dfrac{Sin\,3A}{1 + 2\,Cos\,2A} = \sin A$

(8)

OR

(c) If $\tan A = \frac{1}{2}$ and $\tan B = \frac{1}{2}$ find the value of $\tan (A+B)$

(4)

(d) Show that $\dfrac{Sin\,3A - Sin\,A}{Cos\,A - Cos\,3A} = \cot 2A$

(8)

IV.   (a) Differentiate $y = e^x \log x$ with respect to x

(4)

(b) If $y = \log \sqrt{\dfrac{1+x}{1-x}}$ then find $\dfrac{dy}{dx}$

(8)

OR

(c) Find the differential co-efficient of $\sqrt{\tan x}$

(4)

(d) If $y = \dfrac{3x}{2 + Cos\,x}$, find $\dfrac{dy}{dx}$

(8)

V.　(a) Evaluate : $\int x \, (x-1)^2 \, dx$　(4)

　　(b) Evaluate : $\int \dfrac{Sec^2 x \ dx}{(1+\tan x)^4}$　(8)

<div align="center">OR</div>

　　(c) Evaluate : $\int Sin^5 x . Cos \, x \ dx$　(4)

　　(d) Evaluate : $\int \dfrac{Sin \, x \ dx}{1-sinx}$　(8)

VI.　(a) Solve the following simultaneous equations:
$$8x + 6y = 56$$
$$8x - 6y = 8$$
　(4)

　　(b) Prove that the points A(6,4), B(5,-2) and C(7,-2) from an isosceles triangle.　(8)

<div align="center">OR</div>

　　(c) Show that the point A(1, -2), B(3, 6) and C(5, 10) and D(3, 2) are the vertices of a parallelogram.　(4)

　　(d) Find the Mean of the following frequency distribution:　(8)

Classes	0-10	10-20	20-30	30-40	40-50
Frequency	7	10	15	8	10

<div align="center">*******</div>

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST SEMESTER EXAMINATION APRIL/MAY, 2015

1.3 APPLIED PHYSISCS

Time: 3 Hours   Max. Marks: 80

I.   Answer all the questions in two or three lines   (2x10=20)

   a) Write down the dimensional formula for Force Energy?
   b) Express 18 km/Hr in MS^{-1}?
   c) Define volume coefficient of gas?
   d) Define absolute zero temperature?
   e) Define critical angle?
   f) Write down the difference of Longitudinal wave and Transverse wave?
   g) Define Ohm's Law?
   h) Write down the units of Resistance, capacitor?
   i) Draw the circuit of the working of a full wave rectifier?
   j) Draw the N-type semi conductor of its bonding structure?

   Answer all the questions in detail.

II. a) Write any two limitations and uses of dimensional formula.   4
     b) Check the dimensional correctness of formula $S = ut + \frac{1}{2} at^2$.   8

OR

     c) State the principle of Homogeneity? Define unit?   4
     d) Prove by dimensional method 1 Joule = 10^7 ergs.   8

III. a) State Boyle's law with neat diagram?   4
     b) The pressure of a given mass of gas is increased 5 times its initial pressure, the volume
        of the gas being kept constant. If the initial temperature of the gas is 177^0 C
        Find final temperature.   8

OR

     c) State Charl's law with neat diagram?   4
     d) The volume of gas is 210 cc at a temperature of 27^0 c. Find its volume if temperature is
        increased to 127^0 C. at constant pressure?   8

IV. a) The velocity of sound wave in water 1400 m/sec. Find the frequency of sound wave in
        water having wave length of 7 mts.?   4
     b) Define Resonace, wave length, damped oscillations forced oscillations.   8

OR

     c) The critical angle for glass is 30^0C. Calculate the refractive Index of glass?   4
     d) With a neat diagram explain the action of a simple Microscope.   8

V. a) 3 Resistors of resistances 10 Ohms, 50 Ohms and 35 Ohms are connected in series.
Calculate the equivalent resistance? 4

b) Derive the equation for equivalent capacitance when the capacitors are connected in parallel. 8

OR

c) A current of 2 mA flows through a conductor, when its ends are at a potential difference
of 5 V. Find the resistance of the conductor. 4

d) Give the circuit of wheat stone bridge, obtain the condition for balancing wheat stone bridge. 8

VI. a) What are Intrinsic and Extrinsic semi conductors? 4

b) Define logic gate? Describe OR gate with truth table? 8

OR

c) What are forward bias and reverse bias? 4

d) Describe working of P-N-P transistor with neat diagram? 8

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST SEMESTER EXAMINATION APRIL/MAY, 2015

1.4 APPLIED CHEMISTRY (Back Paper)

Time: 3 Hours   Max. Marks: 80

I. Answer one mark questions in one lines   (1x10=10)

 1. Other name of non-carbonate hardness is _____.
 2. PPM means _____
 3. Melting temperature(Melting point) of Sodium Carbonate is _____
 4. $NaOH + Hcl$ ----------- _____ $+ H_2O$.
 5. H_2O_2 is most active at which pH?
 6. What is the raw material for manufacturing Bleaching Powder?
 7. What is the other name for closed chain compounds?
 8. Give any one rule of IUPAC system of nomenclature.
 9. What is the other name of milk sugar?
 10. Give the chemical formula of adipic acid.

II. Answer two marks questions in one or two lines.(Answer any five) (2x5=10)

 a) Enlist the types of natural water?
 b) Give two examples of reducing agent
 c) Write two physical properties of Sulphuric Acid.
 d) Give the chemical name of Soda ash and Glauber's Salt.
 e) Write the disadvantages of Bleaching powder as a bleaching agent.
 f) Write two properties of Sodium hypochlorite.
 g) What is substitution reaction?
 h) Define hydrolysis
 i) What are the different types of polymers?
 j) What are the uses of Sucrose.

III. a) Why soft water is recommended for textile processing industry? Give reason. (4+8=12)

 b) Explain in detail about oxidation and Reduction with suitable chemical Reaction?

<div align="center">OR</div>

 c) What are the disadvantages of hard water?

 d) Describe about various methods of softening of hard water?

IV. a) What are the uses of Sodium hydroxide?   (4+8=12)

 b) Describe the physical and chemical properties of Sodium Carbonate.

c) Write the uses of Sodium hydrosulphite.

d) Describe the physical and chemical properties of Hydrochloric acid.

V. a) Mention the uses of Rongalite C. (4+8=12)

b) Describe the chemical manufacturing process of H_2O_2.

OR

c) Write the properties of Sodium chlorite.

d) Describe the large scale manufacturing process of Rongalite –C.

VI. a) Write IUPCA name of the following compounds:- (4+8=12)
   i) CH_3COCH_3 ii) CH_4 iii) C_2H_5OH iv) $CH_3C_6H_5$

b) Write the physical and chemical properties of aniline.

OR

c) Discuss the classification of organic compounds with examples.

d) Write the physical and chemical properties of Naphthalene.

VII. a) Give the clarification of Carbohydrates. (4+8=12)
   b) i) Define detergents and their uses.
      ii) Describe mono-sacharides

OR

c) Write the chemical structure of polyester and nylon.

d) Elaborate the chain reaction polymerization and step-reaction polymerization.

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
SECOND SEMESTER EXAMINATION – APRIL-MAY, 2015.

2.1 WEAVING TECHNOLOGY & TEXTILE CALCULATIONS-I

Time: 3 Hours

Max.Marks: 80

I. Answer all questions in two or three sentences. (2x10=20)

1. What are the objectives of yarn winding?
2. What are the ingredients commonly used for cotton sizing?
3. What are the different types of healds used in the textile industry?
4. What are the disadvantages of bottom closed shedding?
5. What are the different types of shuttles used in the textile industry?
6. What are the different types of secondary motions of a handloom?
7. Calculate the weight in lbs of 600 hanks of 80^s cotton yarn?
8. Calculate the count in New English System of 200 mtrs. of cotton yarn if its weight is 10 gms.
9. Convert 40^s Ne cotton to Nf cotton count.
10. Convert 26^s Ne cotton to Tex system.

Answer the following questions in detail.

II.   a) What are the different forms of yarn packages used in the Textile Industry and explain
         which form of yarn package is preferred for the Handloom Industry? (4)
      b) Explain in detail the process of warping. (8)

                                   (OR)

      c) What are the essential requirement of good warping in a sectional warping machine? (4)
      d) Explain in detail the method of street warp sizing practiced in the handloom industry. (8)

III. a) What are the functions of reed? (4)
      b) With a neat diagram, explain the passage of warp in a fly shuttle handloom. (8)

                                   (OR)

      c) Classify the different motions of weaving. (4)
      d) With a neat diagram explain the jack and lamrod system of shedding mechanism used on
         handloom. (8)

IV.   a) What are the different types of picking mechanism used in the handloom industry and
         mention their uses. (4)
      b) What are the different types of let off motions used in handloom industry and explain
         any one method in detail? (8)

                                   (OR)

      c) How the count of reed is expressed? (4)
      d) What are the different take up motions used in the handloom industry and explain
         any one method in detail. (8)

V. a) If 66 yards of cotton yarn weighs 8 grains, calculate its count in English Cotton system. (4)

b) i) Calculate the length in metres of 500 gms. of nylon yarn whose count is 25 Tex. (4)

ii) If 1500 metrs. of silk yarn weighs 10 gms, what is the count of yarn in Denier Metric system? (4)

(OR)

c) The weight of 44^s worsted yarn was found to be 160 grains, what is its length in meters? (4)

d) i) What is the length in meter of polyester yarn whose weight is 2 Kilograms, if the count of yarn is 32 Tex. (4)

ii) Calculate the length of one kilogram of silk yarn if its count is 20 Denier Metric (4)

VI. a) Convert 20^s New English cotton count to New French cotton count. (4)

b) i) Derive conversion factor for converting Ne cotton count to worsted system. (5)

ii) Convert 20 Denier Metric count to New English cotton count. (3)

(OR)

c) Convert 34 New French Cotton count to New English cotton system. (4)

d) i) Derive conversion factor for converting Denier Metric count to English cotton count. (5)

ii) Convert 40^s Nf cotton to worsted system. (3)

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DIPLOMA IN HANDLOOM AND TEXTILE TECHNOLOGY
SECOND SEMESTER EXAMINATION – APRIL/MAY – 2015

2.2 FABRIC STRUCTURE & ANALYSIS - II

Time: 3 Hours   Max. Marks: 80

I.   **Answer all questions in 2 or 3 sentences.**   2 x 10 = 20

a) What are the two uses of graph paper?

b) What are the other names of plain fabric?

c) Name two weaves derived from twill weave.

d) Define Hopsack weave.

e) Indicate the draft of transposed twill in 8 x 8.

f) Name the draft and treadling order used for weaving diamond twill.

g) Differentiate between sateen and satin (2 points).

h) What is the main character of Honeycomb cloth?

i) Mark one repeat of corkscrew weave on 5 ends and 5 picks.

j) What is the object of cloth analysis?

Answer all 5 questions.

II.   a) Explain classification of woven fabric.   4

b) Mark the following designs with draft and peg plan.   2 x 4 = 8

    i.   Hopsack weave in 6 x 6

    ii.   Basket weave in 6 x 6

OR

c) What are the ornamentations of plain fabric?   4

d) Mark the following designs with draft and peg plan.   2 x 4 = 8

    i.   4 & 2 Irregular warp rib

    ii.   3 & 3 Regular weft rib

III.   a) Explain the terms Steep twill and Flat twill.   4

b) Mark the following designs with draft and peg plan.   2 x 4 = 8

    i.   Wavy twill across the cloth using 3 up 3 down twill.

    ii.   Herringbone twill using 3 up 3 down twill.

OR

c) Differentiate between wavy twill across the cloth and wavy twill along the cloth.   4

d) Mark the following designs with draft and peg plan.   2 x 4 = 8

    i.   Broken twill using 3 up 3 down twill.

    ii.   Wavy twill along the cloth using 3 up 3 down twill.

.... 2

IV. a) Explain the principles of forming diamond design.   4

    b) Mark the following designs with draft and peg plan.   2 x 4 = 8

       i.   Regular sateen in 8 x 8.

       ii.   Twill dice check in 10 x 10.

OR

    c) Differentiate between Diamond weave and Diaper weave.   4

    d) Mark the following designs with draft and peg plan.   2 x 4 = 8

       i.   Brighton Honey comb in 16 x 16.

       ii.   Combined twill using 4/2 twill with 3/3 twill.

V. a) Write short notes on Crepe weave.   4

    b) Mark the following designs with draft and peg plan.   2 x 4 = 8

       i.   Mock leno in 10 x 10.

       ii.   Warp corkscrew weave in 9 x 9.

OR

    c) What is the specialty of Mock leno weave?   4

    d) Mark the following designs with draft and peg plan.   2 x 4 = 8

       i.   Huck-a-back in 10 x 10.

       ii.   Sponge weave in 10 x 10.

VI. Analyse the given fabric sample and furnish the following particulars for its
reproduction.   (2+6+2+2)

       a) Ends per inch and Picks per inch

       b) Weave

       c) Draft

       d) Peg plan.

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
II SEMESTER EXAMINATION – APRIL/MAY 2015

2.3 MATERIAL SCIENCE & ENGINEERING MECHANICS

TIME: 3 Hours   **Max. Marks: 80**

I.   **Answer all questions in one or two sentences.**   (10x2=20)

     a) Write down % of carbon in Cast iron.

     b) Write down name of elements of Brass.

     c) Define Acceleration and write down it's unit.

     d) Define Velocity and write down it's unit.

     e) Define Young modulus.

     f) Define power and write down its unit.

     g) Define forging.

     h) Write down name of two types of Sand used in Moulding process.

     i) Write down formula for Mechanical efficiency of simple machine.

     j) Define friction.

Answer all questions in detail.

II.   **a)**   Write name of Seasoning of timber and discuss any one method of seasoning of timber in detail.

     b)   Write down Physical properties of metals.   (6x2=12)

OR

     c)   Write down the common defects of Timber.

     d)   Define Plastics. Write down types of plastics with few examples.   (6x2=12)

III.

     a)   Two forces P = 10 Kgf and Q = 06 Kgf acting on a particle at an angle 60^0 then find out magnitude of resultant force.

     b)   A body thrown vertically upward with velocity 60 M/Sec. find maximum height it gains.   (6x2=12)

OR

     c)   Three forces acting on a particle are in equilibrium. Angle between first and second force is 90^0 and the angle between second and third force is 120^0. If first force is 3 Kgf then find out value of remaining two forces.

     d)   A body start motion from rest then find how much distance it covers in 5 seconds if acceleration of body is 20M/Sec².   (6x2=12)

IV.   **a)**   Discuss Stress – Strain diagram for test piece of ductile metal.

     b)   A steel wire of cross sectional area 20 mm^2 is subjected to an axial pull of 40 Newton, then calculate the stress in wire.   (6x2=12)

<div align="center">OR</div>

     c)   Prove that total energy of freely falling body is constant every where.

     d)   Define Stress and Strain and also define Hook's Law.   (6x2=12)

V.   **a)**   Give the neat block diagram of Lathe machine with name of its major parts.

     b)   Write down name of important tools & equipment used used in Smithy shop.   (6x2=12)

<div align="center">OR</div>

     c)   Write down name of equipments used in gas welding method.

     d)   Explain Soldering and Brazing operations.   (6x2=12)

VI.   **a)**   A force of 49 Newton is required to pull a cart of mass 50 Kg. over a horizontal surface then find out the coefficient of friction between cart and surface material?

     b)   Describe Screw Jack with neat sketch.   (6x2=12)

<div align="center">OR</div>

     c)   Establish relation between Mechanical advantage, Velocity ratio and Mechanical efficiency of Simple Machine.

     d)   Discuss open belt drive system and give formula for its velocity ratio.   (6x2=12)

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY
BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI, GADAG/SPKM IIHT, VENKATAGIRI

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
SECOND SEMESTER EXAMINATION – APRIL-MAY, 2015.

2.4 FIBRE & YARN TECHNOLOGY

Time: 3 Hours   Max.Marks: 80

I.   Answer the following in two or three lines.   (2x10=20)
   a) Define textile fibre.
   b) How will you identify carded & combed yarn visually?
   c) What is the basic difference between Nylon 6 and Nylon 66?
   d) Give the name of two polyester yarn manufacturing companies in India.
   e) What is the difference between spun silk and filament silk fabric?
   f) Enlist two differences between woolen and worsted yarn.
   g) Compare fibre deposition in seath of ring spun yarn and rotor spun yarn
   h) Give the twisting pattern of ring spun yarn and rotor spun yarn.
   i) What is the difference between woven and non-woven fabrics?
   j) Give the name of any four industrial textile units other than apparel.

Answer all questions in detail.

II. a) Classify textile fibres.   (5)
     b) What are the essential properties required for a textile fibre for its better spinnability?   (7)
                                          (OR)
     c) Write the main properties and uses of silk fibre.   (5)
     d) Draw the flow chart diagram of ring spinning technology.   (7)

III. a) Draw the flow chart for manufacturing of Nylon 66 staple yarn.   (4)
      b) Enumerate the physical, chemical properties and end uses of polyester fibre.   (8)
                                          (OR)
      c) Draw the flow chart for manufacturing of polyester fibre.   (4)
      d) Briefly explain the physical, chemical properties and end uses of viscose rayon fibre.   (8)

IV. a) Enlist the process sequence for manufacturing of spun silk yarn.   (4)
      b) Explain the worsted yarn manufacturing technology.   (8)
                                          (OR)
      c) Explain the life cycle of silk worm briefly.   (4)
      d) Explain the woolen yarn manufacturing technology.   (8)

V. a) Discuss the working principle of open end spinning process.   (4)
      b) Explain the principle and working of friction spinning process.   (8)
                                          (OR)
      c) Explain the working principle of rotor spinning briefly.   (4)
      d) Enlist the comparison between ring spun yarn and open end spun yarn.   (8)

VI. a) Write short note on tyre cord.   (4)
      b) Enlist the steps involved in manufacturing of garment briefly.   (8)
                                          (OR)
      c) Write short note on sewing thread.   (4)
      d) What is textured yarn and how it is manufactured?   (8)

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BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHMPA/KANNUR/KHTI-GADAG/SPKMIIHT- VENKATGIRI

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
THIRD SEMESTER EXAMINATION APRIL/MAY, 2015

3.1 WEAVING TECHNOLOGY AND TEXTILE CALCULATIONS-II

Time: 3 Hours

Max. Marks: 80

I. Answer all questions in one or two lines

2x10=20

a) Write a brief note on design capacity of lattice dobby.
b) Name a four important fabrics woven on Frame loom.
c) What do you understand by the term reversing Motions?
d) Write a brief note on early and late shedding.
e) What is the advantage of parallel Motion in under Pick Mechanism?
f) Indicate the advantages of 7 wheels Take-up Motion, when compared with 5 wheel take-up motion.
g) Define reed count in ST system.
h) Calculate the total number of ends in the warp with the following particulars:

Reed count	-	40^s ST
Denting order	-	Body – 2per dent
Selvedge	-	4 per dent
Reed width	-	49 inch

Body width 0.5 inch selvedge on each side.
i) A single worm of 300 rpm drives a worm wheel of 30 teeth . Find the speed of worm wheel.
j) Calculate the size of the loom pulley required to impart a speed of 200 rpm to a loom which is driven from a line shaft of 120 rpm. The line shaft drum has a diameter of 15 inches.

Answer all questions in detail.

II. a) Write a brief note on Handloom Dobbies.   (4+8=12)
   b) With the help of a line sketch explain the working of lattice dobby.

(OR)

   c) Compare the Frame loom with that of Pit loom.
   d) With a neat sketch explain the passage of warp/cloth in a Multi treadle Frame loom.

III.a) Name the various tensioners used in yarn winding Machine.   (4+8=12)
   b) With a neat sketch explain the passage of yarn through CIMMCO Gwalior cone winding Machine.

(OR)

   c) Write a brief note on any one creel employed in sizing machine.
   d) Explain loom motions in a plain Power loom.

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IV. a) Compare the working mechanism of over pick mechanism with that of under pick mechanism.

(4+8=12)

b) With a neat sketch explain the working of Parallel motion in under pick mechanism.

(OR)

c) Compare the advantages and disadvantages of 7 wheel take-up Motion with that of 5 wheel take-up motion.

d) With suitable example, calculate the practical dividend of a 7 wheel take-up motion, when a standard wheel of 36 teeth being used in train of gear.

V. a) Write a brief note on count of folded yarns.

(4+8=12)

b) By actual measurement, it was found that 10 cms. of a 3 fold fancy yarn contains 12 cms. of one component thread of 2 tex, 15 cms. of another component thread of 28 tex and 14 cms. of the third component thread of unknown count. If the count of the folded yarn is 100 tex. Calculate the count of the unknown component thread.

(OR)

c) Write the relation between ends per inch in reed and ends per inch in cloth.

d) Calculate the average count of the yarns of a warp of the following particulars:

      1 end of 20 tex yarn

      4 ends of 1 tex yarn.

VI. a) Compare the merits and demerits of single motor drive and line shaft arrangement in loom driving mechanism.

(4+8=12)

b) A wheel A of 60 teeth is driven by a wheel 'B' of 40 teeth. On the same stand of 'B' is fixed a wheel 'C' of 80m teeth. The wheel 'C' is driven by a wheel 'D' of 30 teeth fixed on a shaft making 240 rpm Find the speed of 'A'.

(OR)

c) Write a brief not on belt slip due to belt slackness.

d) 'A' Pulley rotates at 120 rpm and has a diameter of 30 cms. Pulley 'B' has a diameter of 50 Cms. If the belt is 0.6 Cm. thick, estimate the number of rpm of pulley 'B' with belt slippage 0.67.

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI-GADAG/SKPMIIHT-VENKATAGIRI

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
III SEMESTER EXAMINATION – APRIL/MAY 2015

3.2 FABRIC STRUCTURE & ANALYSIS-II

TIME: 3 Hours

Max. Marks: 80

I.   **Answer all the questions in one or two lines.**   **(2x10=20)**

    i)   What is colour and weave effect?

    ii)   What is distorted thread effect?

    iii)   Name four varieties of Bedford cord weave.

    iv)   Differentiate between Bedford cord and welt structure.

    v)   Name four varieties of double cloth structure.

    vi)   Indicate the objects of manufacturing of double cloth.

    vii)   What are methods of stitching followed in manufacturing of Centre Stitched Double Cloth?

    viii)   Differentiate between Thread Interchanging Double cloth and Cloth interchanging double cloth.

    ix)   What are the objects of cloth analysis?

    x)   Furnish constructional particulars of a bed sheet.

    Answer all the questions in detail.

II.   a) Construct colour and weave effect on 12 ends x 12 picks with the following details

              Weave: 3 and 3 twill

              Colouring order on warp and weft – 2 white, 2 black   **(4)**

    b) Construct design of warp stripe effect by combining weaves of $\frac{1}{3}$ twill

      and $\frac{3}{1}$ twill with the following details.

      No. of ends per repeat of the warp stripe pattern: $\frac{1}{3}$ twill for 16 ends and $\frac{3}{1}$ twill for 8 ends

      No. of picks per repeat of the design: 4

      Construct draft and pegplan also.   **(8)**

OR

    c) Construct design of warp stripe effect by combining weaves of 6x6 mock leno
and plain weave with following particulars.

      No. ends per repeat of the warp stripe pattern: 12 ends of mock leno and 6 ends
of plain weave.

      No. picks per repeat of the design: 6   **(4)**

    d) Mark a repeat of Warp Distorted thread effect on 14 ends and 14 picks.

      Thread order - 3 ground 1 distorted 6 ground 1 distorted 3 ground

      Distorted end floats over all picks except on 4th and 11th pick

      Construct draft and pegplan also.   **(8)**

III.   a) Construct plain face Bedford cord design arranged with alternate pick on
        20 ends x 4 picks.   (4)

    b) Construct plain face Bedford cord on 16 ends x 4 picks. Also draw draft,
        pegplan for the same design.   (8)

<div align="center">OR</div>

    c) Construct loose back welt structure on 6 ends x 8 picks.   (4)

    d) Construct fast back welt structure on 6 ends x 14 picks using base welt
        Structure of 6 ends x 10 picks. The wadded picks are 3 & 4, and 9 & 10.
        Draw draft, pegplan for the same design.   (8)

IV.   a) Construct self stitched double cloth structure using the following particulars.
        i)   Face weave – 4 and 4 twill   ii)   Back weave – 4 and 4 twill
        iii)   Stitching face ends dropped on back picks.
        iv)   Arrangement of warp and weft threads – 1 face and 1 back   (4)

    b) Construct self stitched double cloth design using 3 and 3 twill weave both
        face and back after considering the following details.
        i)   Arrangement of warp and weft threads – 1 face and 1 back
        ii)   Stitching back ends lifted on Face Picks.
        Also construct draft and pegplan for the same design.   (8)

<div align="center">OR</div>

    c) Illustrate the line diagram of the tubular plain cloth and double width plain cloth.   (4)

    d) Construct the weave and draw interlacement diagram of the plain tubular cloth.   (4)

V.   a) Construct Centre warp stitched double cloth using the following details.
        i)   Face and back weave – 2 and 2 twill
        ii)   Arrangement of face and back threads 1:1 both for warp and weft.
        iii)   1 Stitching end per repeat of the design   (4)

    b) Construct thread interchanging double cloth for the formation of vertical stripe
        Of a dark and 4 light threads alternately using Plain weave both for face and back.
        Also construct draft and pegplan for the above design.   (8)

<div align="center">OR</div>

    c) Construct Centre weft stitched double cloth using the following details
        i)   Face and back weave – 2 and 2 twill
        ii) Arrangement of face and back threads 1:1 both for warp and weft.
        iii) 1 stitching pick per repeat of the design.   (4)

    d) Construct cloth interchanging double cloth using Plain weave for both face
        and back fabric.
        Also construct draft and pegplan for the above design.   (8)

VI.   Analyse the given cloth sample and furnish the following details.   (6+4+2 = 12)
        i)   Design, draft and pegplan
        ii)   Ends per inch and picks per inch
        iii)   Warp and weft pattern

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI, GADAG/SPKM IIHT, VENKATAGIRI.

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
THIRD SEMESTER (BACK PAPER)   EXAMINATION – APRIL-MAY, 2015.

3.3 CHEMICAL PROCESSING OF TEXTILES-I

Time: 3 Hours

Max.Marks: 80

(2x10=20)

I.   Describe the following in one or two lines.

a) Shearing and cropping.
b) Auxochrome and Chromophore.
c) Diazotization
d) Monochloro and Dichlorotriazynil dyes.
e) Percentage of exhaustion.
f) Preparation of dye solution
g) Methylene compound in Naphtholation.
h) Banned dyes.
i) Effect of electrolyte in direct dyeing.
j) Cationic dyeing fixing agent.

Answer all the questions in detail

II.

a) Describe the impurities present in grey cotton fabrics. Write in detail working of vertical kier with neat diagram. (4)

b) Bleached cotton fabrics are essential for dyeing of light shades, explain why? Write in detail about J.Box type of bleaching machine. (8)

(OR)

c) What are the main objects of desizing of cotton fabrics? Describe the enzymatic desizing in detail. (4)

d) Justify the statement "Hydrogen peroxide is a universal bleaching agent". What do mean by 120 vol. of hydrogen peroxide? (8)

III.

a) Why cotton dyed Sulphur black suffers from branziness and tendering? How these defects are removed? (4)

b) Describe the process of dyeing of cotton yarn with vat dye by exhaust method. Write the function of various auxiliaries used in dyeing process. (8)

(OR)

c) Explain the chemistry involved in application of various types of reactive dye on cotton. (4)
d) Explain the use of salt and alkali in reactive dye. (4)
e) Describe the process of dyeing hot brand reactive dye on cotton yarn. (4)

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IV.

    a) Describe the sequence of operations used while dyeing of cotton with azoic colours. Explain the functions of auxiliaries used in the process. (8)

    b) Describe the after treatments given to improve the washing fastness properties of direct dyed cotton goods. (4)

(OR)

    c) Indicate and discuss the importance of various factors which effects the dyeing of cotton goods with vat dyes under practical conditions of dyeing. (4)

    d) Describe the bleaching of cotton with H_2O_2. Discuss the advantage and disadvantage by this method of bleaching. (8)

V. a) What is solublised vat dye? How it is differ from vat dyes during dyeing process? (4)

    b) Describe the defects and remedies encountered during dyeing of cotton fabrics by exhaust method of dyeing. (8)

(OR)

    c) Why are reactive dyes and azoic dyes soaped after dyeing? Explain with proper reasons. (4)

    d) What is redyeing? How to strip out color from vat dyed cotton fabrics and redyeing the same with vat dyes? (8)

VI.

    a) What are the factors involved during bleaching of cotton yarn with H_2O_2 solution? Write in detail with suitable chemical reactions. (4)

    b) Explain various after treatments required for improving the brightness and fastness of Sulphur dyed fabrics. (8)

(OR)

    c) Distinguish between dyes and pigments. Write at least four points. (4)

    d) Calcium hypochlorite bleaching is more popular for bleaching of cotton goods. Enlist the draw-back of this bleaching method with suitable examples. (8)

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DIPLOMA IN HANDLOOM AND TEXTILE TECHNOLOGY
III SEMESTER EXAMINATION – APRIL/MAY – 2015

3.4 ECOLOGY & POLLUTION CONTROL IN TEXTILE INDUSTRY

Time: 3 Hours

Max. Marks: 80

I.   Answer all questions in 2 or 3 sentences.   **2 x 10 = 20**

    a) Write about soil pollutants.
    b) What are the pollutants in textile industry?
    c) What are the causes of air pollution?
    d) Tabulate the Air Quality Standards in India.
    e) Define radiation pollution.
    f) State the sources of waste water in wet processing.
    g) Write the physical method in effluent treatment.
    h) What is sludge treatment?
    i) Name and define the unit of loudness.
    j) Write the effects of noise pollution.

Answer all the questions in detail.

II.   a) Write short notes on the segments of environment.   4
    b) Write in brief about the harmful effects of environmental pollution on human beings. 8

<div align="center">OR</div>

    c) Explain Acid Rain.   4
    d) Write short notes on an overview of environmental pollution in Textile Industry.   8

III.   a) What are the sources of air pollution in a textile mills.   4
    b) Write the sources and effects of SO_x and NO_x 8

<div align="center">OR</div>

    c) What are the sources and effects of chlorine?   4
    d) Write in detail about out door and in door air pollution.   8

IV.   a) How will you calculate COD in waste water?   4
    b) Define the following:
       DO, BOD, TDS and SS   8

<div align="center">OR</div>

    c) How is BOD measured?   4
    d) Write various methods of waste reduction in textile industry.   8

V.   a) Explain coagulation.   4

b) Tabulate the tolerance level of effluents in wet processing of textiles.   8

OR

c) Write the impact of water pollution on marine life.   4

d) Design and explain the effluent treatment plant.   8

VI.   a) How will you control noise pollution in textile industry?   4

b) Explain the Eco-Standards and Eco-Labels for textiles.   8

OR

c) Write short notes on ISO 14000.   4

d) What are the new challenges towards achievements of rigid standards in textile processing effluent.   8

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.1 WEAVING TECHNOLOGY & TEXTILE CALCULATIONS-III

TIME: 3 Hours   Max. Marks: 80

Answer all the questions.

I.   The answer for each question should be in two or three sentences.   (2x10=20)

   a)   What are the advantages & disadvantages of side weft fork motion?

   b)   Mention differences between Single lift dobby and double lift dobby.

   c)   What are the mechanisms make an ordinary powerloom into an automatic powerloom?

   d)   What are the different types of drop wires used in warp stop motion?

   e)   Calculate the efficiency of a warping machine if its calculated rate of warping in 920 meters/min. but actually producing 736 meters per min of warp.

   f)   A super speed beam warper with a warping speed of 880 yard/min. is producing a standard warp with overall efficiency of 84%. Calculate total length of warp produced in 8 hours.

   g)   The width of warp is required to be 40 inches. The number of sections in the warp is 8. Calculate the width of each section.

   h)   A weaver's beam contains 50 Kgs. of sized warp and is 1000 meters of long with 2000 ends. Calculate the count of sized warp in Tex System.

   i)   Calculate the average rpm of weaving shed containing 520 loom with the following partuculars.

Number of loom	RPM
120 looms	210
200 looms	200
200 looms	180

   j)   Write the formula for calculating Actual production in yards per loom per hour.

Answer all the following questions in detail.

II.   a) Compare between the loose reed and fast reed mechanism.   (4)

   b) Explain with a neat sketch the working of loose Reed Mechanism.   (8)

                                    OR

   c) Compare between the side weft fork and centre weft form mechanism.   (4)

   d) Explain the working mechanism of the Climax Dobby used in powerlooms with a line diagram.   (8)

III. a) What are the advantages of Automatic powerlooms?   (4)

   b) Explain the working of a cop changing mechanism.   (8)

                                    OR

   c) Draw a layout diagram of a powerloom shed.   (4)

   d) Explain with a neat sketch the working of mechanical warp stop motion.   (8)

IV.   a) The length of warp on a warper's beam is 3600 yards and the number of ends in the warp is 420. The weight of warp in the beam is 900 pounds, calculate the beam count.   (4)

   b) A super speed beam warping m/c is required to supply 50,000 mts. of warp with 3234 ends from a set of warp back beams. The count of warp is 20 Tex. If the capacity of warping creel is 480, calculate the following.

            i)   No. of ends on each back beam.
            ii)   No. of backs beams to be made.
            iii) Weight of warp yarn on each back beam.   (8)

                                    OR

c) Calculate quantity of warp yarn required in lb for production in warping machine 8 hours per shift with a calculate speed of 210 yds per minutes with efficiency of 75%. The count of yarn is 20^s. Allow 5% wastage also. (4)

d) Calculate the quantity of yarn in pounds required for a set of 6 back beams. The length of warp on each beam is 24000 yards and number of ends on each beam of 462. Count of warp is 36' cotton. Allow 1.5 percentage waste during warping. (8)

V. a) A striped warp is to be prepared on a sectional warping machine with a creel capacity of 400 bobbins. There are 80 stripes in a warp each containing 40 ends per repeat of pattern. 20 selvedge ends are extra on each side. Calculate the number of sections to be made and No. of ends in each section. (4)

b) The calculated production of a slasher in 100 yards per min. The count of un sized warp is 40's cotton and the efficiency of the machine is 75%. The size percentage put on the warp is 10%. Calculate the following.
    i)   The actual production in lb per day for 8 hours.
    ii)   The total weight of sized warp in lb produced in 8 hours. (8)

OR

c) A warp containing 2500 ends and 3200 mts long has to be sized with 25% size on it. If the count of warp yarn is 16 Tex, calculate the weight of size in kgs. to be put on the warp. (4)

d) 44's cotton unsized warp containing 2400 ends with 1680 yards length. If the sized warp weighs 120 pounds, calculate the percentage of size put on the warp and sized warp count. (8)

VI. a) The actual production per min per spindle of pirn winding machine is 672 yards of 12's cotton yarn. Calculate the time that will be required to wind 1200 pounds of yarn in 30 spindles. (4)

b) The time taken to a wind a full pirn on pirn winding machine without any stoppage is 2.5 minutes. The weight of yarn on the pirn is 50 grams and the count of the yarn in 30 Tex. Calculate the production in Kgs. of a machine with 20 spindle/shift of 8 hours, if the efficiency is 80%. (8)

OR

c) A loom is running with 216 picks per min and picks per inch in the cloth of 60, but actually 254.5 yards of cloth produced in 53 hours. Calculate the running efficiency of the loom. (4)

d) A cloth with 44 picks per inches to be woven on a loom running at 200 picks per min. The width of the cloth on the reed to be woven is 52 inches and the efficiency of the loom is 76%. If the weft pirn contains 1.21 oz. of 30's cotton yarn, calculate the number of pirns required to run the loom per hour. (8)

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI-GADAG/SKPMIIHT-VENKATAGIRI

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.2 FABRIC STRUCTURE & ANALYSIS-III

TIME: 3 Hours

Max. Marks: 80

PART – A

Answer all the questions.

I. The answer for each question should be in two or three sentences.   (2x10=20)

i)   Write down any two differences between wadded double cloth and treble cloth.
ii)   A treble width plain cloth is woven on a handloom keeping reed width of 30 inches. What will be the width of that woven fabric when laid as single layer on a table?
iii) Write any two salient features of backed cloth.
iv)   Give any two reasons for using wadding threads in the backed cloth.
v)   In which fabric 'Face to Face' principle is used?
vi)   Give two examples of weft pile fabrics.
vii) Why terry pile fabrics are preferred for toweling fabrics?
viii) Why two warp beams are used while weaving Terry towels?
ix)   Write any two points on how to indentify warp and weft in a given fabric sample.
x)   Write down the formula to find weight per square meter (GSM) from a given fabrics watch of 10cm x 10cm.

PART – B

Answer all the following questions in detail.

II. a) Why wadding threads are used in double cloth?   (4)
     b) Construct warp wadded double cloth with self stitching using 2/2 twill for both
        face and back weave. Keep the weft order 1 face 1 wadding 1 back.   (8)

OR

     c) Differentiate warp wadding from weft wadding.   (4)
     d) Taking 12 ends and 12 picks, construct treble width plain fabric and show the
        the weft interlacement diagram separately.   (8)

III. a) List down the differences between warp backed and weft backed fabrics.   (4)
     b) Construct a design for warp wadded weft backed fabric taking the base weaves
        of 1up 4down twill for face and 4 up 1 down for back.   (8)

OR

     c) Among warp backed and weft backed fabrics, which one will give higher
        production? Justify your answer.   (4)
     d) Construct a design for weft wadded warp backed fabric with base weaves
        of 3up 1down twill for face and 1up 3down twill for back.   (8)

IV. a) Differentiate between loop piles and cut piles.   **(4)**
     b) Draw a design and thread interlacement diagram for a warp pile fabric produced
        with the aid of wires.   **(8)**

OR

c) Mention any 4 differences between velvet and velveteen fabrics.   **(4)**
d) Discuss the techniques involved in the manufacturing of chenille Axminster carpet.   **(8)**

V.   a) Draw 4 pick Terry design.   **(4)**
     b) Draw graph design and thread interlacement diagram for 3 pick and 4 pick
        terry weaves.   **(8)**

OR

c) Draw a 5 pick terry weave.   **(4)**
d) Taking 16 ends and 16 picks, show the stripe effect of terry design using 4 pick
   terry weave. Mention proper colouring order of warp threads.   **(8)**

VI. Analyse the given fabric swatch and furnish the following particulars   **(2+2+4+2+2)**
     for its re-production.

i) Ends per inch   ii) Picks per inch   iii) Weave   iv) Draft   v) Peg plan

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.3 CHEMICAL PROCESSING OF TEXTILES-II

TIME: 3 Hours   **Max. Marks: 80**

I.   Answer all the questions in two or three sentences.   (2x10=20)
     i)   What are the various methods of degumming of silk?
     ii)   Name four varieties of silk.
     iii)   Write the receipe for Nylon bleaching.
     iv)   Write the receipe for wool bleaching.
     v)   Why acid dyes are called acid dyes?
     vi)   Why metal – complex dyes are preferred to chrome dyes?
     vii)   Why wet fabric is loaded on Jigger?
     viii)   What do you understand by the term "Percentage Expression"?
     ix)   Give four examples of natural dyes.
     x)   What is the use of Grey scale & staining scale?

Answer all the questions in detail.

II.   a) Draw a neat diagram showing morphological view of silk fibre.   (4)
     b) Explain in detail the Emulsion Scouring of wool.   (8)

OR

     c) Explain solvent scouring method for wool.   (4)
     d) Explain in detail Alkali Degumming of silk.   (8)

III.   a) What do you understand by term "Bleaching"? Why bleaching of wool is done?
     What are different bleaching methods for wool?   (4)
     b) Explain in detail the bleaching of silk with Hydrogen peroxide.   (8)

OR

     c) How scouring of Polyester is done?   (4)
     d) Compare Potting, Crabbing & Decatising processes.   (8)

IV.   a) What is the role of electrolyte in dyeing of wool with Acid dyes?   (4)
     b) Explain in detail the dyeing of silk with Acid dyes.   (8)

OR

     c) Why metal complex dyes are preferred to Acid & Chrome dyes?   (4)
     d) What are reactive dyes? Explain any one method of dyeing of silk with reactive dyes.   (8)

V. a) Draw a neat diagram of Vertical Drying Range (VDR).   (4)
b) Explain the working of a Jigger with a neat sketch showing all parts & their
functions.   (8)

OR

c) Differentiate between treatment of cloth on Jigger & Winch.   (4)
c) Draw & explain working of Cabinet Hank Dyeing machine.   (8)

VI. a) What are the advantages of Natural dyes in comparison to synthetic dyes?   (4)
b) Explain in detail Rubbing fastness test with a neat diagram.   (8)

OR

c) What do you understand by term "Oxidation Marks"? How will you get them
corrected during dyeing process?   (4)
d) Explain in detail the criteria for selection of dyes.   (8)

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY
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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.4 PROFESSIONAL ETHICS AND PERSONALITY DEVELOPMENT

TIME: 3 Hours   Max. Marks: 80

I. **Answer all the questions in two or three sentences.**   **(2x10=20)**
   i)   Explain importance of civic virtue.
   ii) What are the three stages in which behavioural pattern between an employer & employee is addressed?
   iii) What are the four main character traits that help an individual to develop their character.
   iv) Describe the emotional intelligence skills of Emotional Mastery or Courage.
   v)   What are the main criticism of Kohlberg's theory as proposed by Carol Gilligan?
   vi) What is code of Ethics?
   vii) What are importance of Goal's in one's life?
   viii) Why there is need to decide on career plan?
   ix) What are barriers (any two) to Effective listening?
   x)   Classify and name different types of communications.

Answer all the questions in detail.

II. a) Explain the relationship between Morals, Value & Ethics .   (4)
     b) What is Ethics? Explain each one in detail.   (8)

OR

     c) Why is integrity of an employee important in an organization?   (4)
     d) Write short notes on importance of a positive relationship between an employer & employee in an organisation.   (8)

III. a) Explain meaning of the term "Work – Place – Spirituality".   (4)
     b) Explain the ten basic skills/qualities that one must develop to achieve development in all spheres in one's personality.   (8)

OR

     c) What do you mean by "Moral-Dilemmas"? Explain it with help of an example. (4)
     d) Explain the terms: (i) Respect for others.
                             (ii) Respect for self.   (8)

IV. a) Explain the level of Moral Development as proposed by Lawrence Kohlberg. (4)
b) What is meant by Safety and Risk Assessment? What are importance and process of Risk Assessment?

OR

c) Explain the specific ways in which Engineering societies can promote Ethics. (4)
d) Explain the relationship between Law & Ethics with a suitable example. (8)

V. a) What is meant by "Perception"? Write down sub process of perception. (4)
b) What are the steps towards successful goal setting? (8)

OR

c) What is "Self-Esteem". What are it's importance to an individual. (4)
d) Define "Attitude". Can Attitude be changed? Explain. (8)

VI. a) What are different types of Body languages? (4)
b) What is communication? Explain the principles & barriers to effective communication. (8)

OR

c) What are different methods to maintain a strong organizational culture? (4)
d) What is Time Management? Explain Time-Management with reference to Pickle – Jar Theory. (8)

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DIPLOMA IN HANDLOOM AND TEXTILE TECHNOLOGY
FIFTH SEMESTER EXAMINATION – MAY – 2015

5.1 WEAVING TECHNOLOGY & TEXTILE CALCULATIONS-IV

Time: 3 Hours   Max. Marks: 80

Answer all the questions in two or three sentences   **2 x 10 = 20**

I   1.   Give the name of two shuttle less looms.

    2.   Write down the factors that influence the weft insertion rate and machine speed in an Air-jet weaving machine

    3.   What is a "Jacquard Machine"?

    4.   List down the advantages of Double Lift Jacquard over Single Lifts.

    5.   Name two types of fabrics produced by using inverted hook jacquard.

    6.   Name two types of fabrics produced by using self twilling jacquard.

    7.   Calculate the diameter of 40 Tex Cotton yarn using Pierce's formula.

    8.   Calculate the diameter of 24^s Woolen yarn using Ashenhurst's formula

    9.   What is "Cover Factor"?

    10. Why "Cover Factor" is an important measure in fabric formations?

Answer all the questions in detail: **(4 +8) x 5 = 60**

II   (a)   Write a short note about Air-jet and Water Jet weaving machines.   4

     (b)   Classify the weaving machines based on weft insertion techniques and explain the working principles of projectile weaving machines with suitable diagrams.   8

OR

     (c)   Write a short note about various types of rapier.   4

     (d)   Explain the working principle of Air-jet weft insertion technique with Diagrams   8

III (a)   Explain briefly the function of different part of a jacquard machine.   4

     (b)   Explain the mechanism and working principle of Centre Shed Jacquard   8

OR

     (c)   List down the requirements for Jacquard Mounting.   4

     (d)   Explain the working principle of Double Lift Double Cylinder Jacquard Machine   8

| IV | (a) | List down the features of Twilling Jacquard. | 4 |
| | (b) | Explain the mechanism and working principle of a Damask Jacquard. | 8 |

OR

| | (c) | Write a brief note about Gauze Weaving | 4 |
| | (d) | Explain the mechanism and working principle of Jacquard used for Leno Weaving. | 8 |

| V | (a) | Write a note on Ashenhurst's Rule for estimation of yarn dia. | 4 |
| | (b) | Calculate the Diameter of the following using Ashenhurst's Rule | |

   (i) 60^s Cotton Yarn (ii) $2/40^s$ Cotton Yarn

   (iii) 40^s Worsted Yarn (iv) 40^s Woollen Yarn   8

OR

| | (c) | Write a note on Pierce's formula for estimation of yarn dia | 4 |
| | (d) | Calculate the count of the following yarns. | |

   (i) Cotton yarn in Ne system having 1/177 inch dia.
   (ii) Two fold cotton yarn in Ne system; having 1/160 inch dia.
   (iii) Polyester yarn in Tex system having 1/203.6 inch dia.
   (iv) Worsted yarn having 1/144 inch dia.   8

VI	(a)	Write a note about calculation of cloth cover using the Pierce forumula	4
	(b)	(i)	Calculate the warp & Weft cover factors of a worsted fabric Containing 60 ends of 40s worsted and 5 2 picks of 36s Worsted	4
		(ii)	Determine the warp & weft cover factors of the following Fabric : 60 denier Nylon x 48s worsted. 96 x 72	4

OR

| | (c) | Compare the Peirce fractional cover with the Proposed fractional Cover. | 4 |
| | (d) | Derive the formula for calculating cloth cover & weight per unit area | 8 |

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
V SEMESTER EXAMINATION – APRIL/MAY 2015

5.2 FABRIC STRUCTURE & ANALYSIS-III

TIME: 3 Hours   Max. Marks: 80

PART – A

Answer all the questions in one or two lines.

I.   (2x10=20)

   i) Define the term Gauze.

   ii) What are the different types of ends used in Gauze and leno weaving.

   iii) Draw straight draft of Leno weaving.

   iv) Define top douping and bottom douping in leno weaving.

   v) Draw 12 x 8 count of graph.

   vi) Define Reversible Damask and Non-reversible Damask.

   vii) Write the order of ends and picks used in patent satin.

   viii) Write the type of ends used in pique structure.

   ix) Find Ends/inch of the sample supplied to you.

   x) Find picks/inch of the sample supplied to you.

Answer all the questions in detail.

II.   a) Draw neat diagrams of bottom douping and top douping in leno weaving.   (4)

     b) Write short notes on Easer motion and Shaker motion.   (8)

OR

     c) Draw the formation of Crossed Shed in leno weaving.   (4)

     d) Draw the formation of open shed in leno weaving.   (8)

III.   a) Draw the draft to produce stripe fabric using plain and straight draft leno.   (4)

     b) Draw the interlacing diagram from the above draft to produce combination of
     plain and leno stripe [8 picks]   (8)

OR

     c) Draw the draft to produce stripe fabric using twill and leno stripe.   (4)

     d) Differentiate between Gauze and Leno.   (8)

IV. a) Write about the appropriate selection of count of graph paper for graph designing. (4)

b) Using 16x15 guide/punching graph, indicate the complete structure of Damask fabric in 40x45, woven with the pressure harness set with 2 & 3 decked mail eyes alternately 3 picks per card and 5-special heald shaft. (8)

OR

c) Draw neat diagram of pressure harness set with harness having 2 and 3 decked mail eyes – alternately and 5-special heald shaft. (4)

d) Taking 40 x 40, indicate the structure of warp (or) weft backed cloth using 5-thread twill binding. (8)

V. a) Briefly explain the use of working comber boards in patent satin. (4)

b) Using 16 x 12 guide / punching graph indicate the complete structure of figured pique fabric of 4 – pick style on 48 x 48. (8)

OR

c) Indicate the two weaves of figured pique using 4-pick structure. (4)

d) Using 16x12 guide/punching graph, indicate the complete structure of figured patent satin fabric on 48x48. (8)

VI. Analyse the sample supplied to you and derive (12)
   a) Weave.
   b) Draft and peg plan of the derived weave.

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
V SEMESTER EXAMINATION – APRIL/MAY 2015

5.3 CHEMICAL PROCESSING OF TEXTILES-III

TIME: 3 Hours   **Max. Marks: 80**

I.   **Answer all the questions two or three sentences.**   **(2x10=20)**
   i)   What do you mean by carrier dyeing?
   ii)   Write any two advantages of thermosol dyeing.
   iii)   Write the principle of HTHP dyeing technique.
   iv)   Write any four common dyeing defects occurred in polyester dyeing.
   v)   List out the dyes suitability for Acrylic fibre.
   vi)   Write the advantages of basic dyes, dyeing with acrylic fibre.
   vii)   List out the styles of Printing.
   viii) What do you mean by discharge style of Printing?
   ix)   Write the role of thickener used in printing.
   x)   List out the methods of fixation used for printing.

Answer all the questions in detail.

II.   a) Write the objects of Heat setting.   (4)
      b) How do you dye Polyester fabric by Exhaustion method?   (8)

OR

      c) Brief on methods of Heat setting suitable for PET material.   (4)
      d) Explain in detail the thermosol method of dyeing of polyester fabric.   (8)

III. a) List out any two dyeing defect's cause and remedies in jet dyeing machine.   (4)
      b) With neat line diagram, explain the working of beam dyeing M/c.   (8)

OR

      c) Briefly explain the sequence of process of P/C Blended fabric preparation.   (4)
      d) Explain in detail the working operation of soft flow dyeing machine.   (8)

IV.   a) Brief on the structural aspects of Nylon affecting their dyeing behavior.   (4)
      b) Explain in detail the dyeing of Nylon fabric with Reactive dyes.   (8)

OR

      c) Brief on the structural aspects of Acrylic w.r.to dyeing.   (4)
      d) How do you dye the acrylic fabric with cationic dyes?   (8)

V. a) Differentiate dyeing and Printing. (4)

b) Write the merits and demerits of Rotary Printing machine. (8)

OR

c) What do you mean by styles of printing and brief on each style. (4)

d) What do you mean by transfer printing? Write its advantages & disadvantages. (8)

VI. a) What do you mean by Ageing? Write its application in printing. (4)

b) Explain in detail the preparation of screen for Rotary screen printing. (8)

OR

c) What do you mean by Curing? Write its application in printing. (4)

d) Write the various ingredients used in textile printing, explain its role with example. (8)

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DIPLOMA IN HANDLOOM AND TEXTILE TECHNOLOGY
FIFTH SEMESTER (BACK PAPER) EXAMINATION – MAY – 2015

5.4 PRINCIPLES OF TEXTILE TESTING

Time: 3 Hours   Max. Marks: 80

Answer all the questions in one or two lines :   (2 x 10) = 20

I   1.   What are two types of sample ?

     2.   Define Moisture regain.

     3.   One hank of yarn weighs 454.5 kg. What is its count in Ne – cotton ?

     4.   9000 Meters of silk yarn weighs 20 g. What is its denier ?

     5.   76/36/350 polyester. What do the numbers indicate ?

     6.   What are three different methods of assessing yarn evenness ?

     7   What are the principles of tensile strength testing machines ?

     8   Lea strength of 40s Ne cotton yarn is 60 lbs. Calculate its CSP.

     9.   What is the formula for calculating crimp ?

     10.   What is the formula for calculating shrinkage ?

Answer all the questions in details.   (4 +8) = 12

II   (a)   What are the characteristics of random sample ?

     (b)   What are the effects of moisture regain on fibre properties.

OR

     (c)   What are the characteristics of a biased sample ?

     (d)   Explain the method of determination of Moisture regain by using moisture testing oven.

III. (a)   What are different count systems that can be tested by using   (4 + 8) = 12
            beesley's balance

     (b)   Explain the measurement of twist by using single yarn twist tester.

OR

     (c)   What are the different principles of twist testing ?

     (d)   Explain the method of determination of count of yarn by using warp reel and Weighing balance.

IV. (a) Define tensile strength.   (4+8) = 12

    (b) Explain with a neat diagram, determination of lea strength of yarn by using Pendulum lever lea strength tester.

OR

    (c) What is the formula for calculating tenacity ?

    (d) Explain with neat diagram, determination of single yarn strength by using Pendulum lever single yarn strength tester.

V. (a) What are the different types of strength testing performed on fabrics? (4 + 8)=12

    (b) Explain the method of assessing bursting strength of fabric by using diaphragm method.

OR

    (c) Differentiate between crease resistance and crease recovery ?

    (d) Explain the determination of crease recovery property of a fabric by using Shirley crease recovery tester.

VI. (a) Name any ten fabric defects.   (4 + 8) = 12

    (b) How will you measure the crimp % of yarn in fabric by using Shirley Crimp Tester ?

OR

    (c) Define TQM ?

    (d) What are the elements of ISO – 9000 ? Briefly explain each one of them .

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION – APRIL-MAY, 2015.

1.1 ENGLISH & COMMUNICATION SKILL

Time: 3 Hours   Max.Marks: 80

The question paper has two parts. Answer to Part-A should be written in the question paper itself and Part B in the Answer Book.

PART-A (Marks:60)
GRAMMAR

I. **Write down the parts of speech of each word given under the sentence.**   (5x½=2½)

a. If Rita studies well she can get first rank.

1.   If   _____
2.   Rita   _____
3.   studies   _____
4.   well   _____
5.   first   _____

b. You don't have an opinion on this subject.   (5x½=2½)

6.   You   _____
7.   don't have   _____
8.   opinion   _____
9.   on   _____
10.   this   _____

II.a. **Underline the nouns in the following sentences.**   (5x½=2½)

11.   Honesty is the best policy.
12.   Gold is costly metal
13.   The little boy was happy to see his mother
14.   The army marched forward.
15.   He came from Mumbai.

b. **Fill in the blanks with the plural of the word given in the bracket.**   (5x½=2½)

16.   Many_____(dictionary) are kept in the library.
17.   We should be careful to play with_____(knife)
18.   _____(Piano) are sold here.
19.   We saw many_____(bus) at the bus stand.
20.   Children were happy to see_____(deer) in the park.

III.a. **Underline the pronouns in the following sentences:**   (5x½=2½)

21.   Shanthy studied well and she passed in first class.
22.   The jury were divided in their opinion.
23.   He joined the University.
24.   Somebody entered the room.
25.   Each of the boys is given a pen.

b. Fill in the blanks with correct pronouns:
26. Dravid is a kind boy._____is always ready to help others.
27. Many students are lazy, _____refuse to do the work.
28. The army suffered severe setback in_____profress.
29. The clerk sent the order to Jane but_____did not respond.
30. The dog barked at the stranger and so_____ran away.

IV. a. Pick out the adjectives in the following sentences: (5x½=2½)
31. The mother gave a juicy orange to the child._____
32. He pushed the wooden door.   _____
33. The room consists of forty students.   _____
34. The teacher called a boy from the first row. _____
35. Whose blue cycle was stolen?   _____

b. Fill in the blanks with the correct adjectives choosing from the given list. (5x½=2½)
(enough;   shady;   kind;   three;   every)
36. The grandmother was very_____to her.
37. The food was_____for them.
38. _____books are kept on the table.
39. _____man has his own umbrella.
40. We should grow_____trees.

V. a. Underline the verbs and write whether they are transitive or intransitive. (5x½=2½)
41. Shanthy took the pencil.   _____
42. The servant went to the market.   _____
43. The enemy blew up the bridge.   _____
44. Nirmala studies well.   _____
45. Srikanth sent a letter to his aunt.   _____

b. Say which verb is correct. Put a round around the correct verb. (5x½=2½)
46. The General as well as soldiers   **was / were**   near the river.
47. Neither John nor Peter **is / are** here.
48. The scholar and the poet **is / are** dead.
49. The children **look / looks** very happy.
50. Each boy and each girl **was / were** given a book.

VI Underline the adverbs in the following sentences. (5x½=2½)

51. She got up quickly.
52. Arun came today running.
53. He always comes in time.
54. The player walked slowly to pick up the ball.
55. He drove the car fast.

VII. a. Underline the conjunction and say whether it is coordinate or subordinate. (5x½=2½)

56. When I went to the theatre I saw my friend. _____
57. Sukanya went to market and bought some books. _____
58. He did not attend the class because he was sick. _____
59. As it was raining they took the umbrella with them. _____
60. He worked hard so he got the first rank. _____

b. Combine the sentences with proper conjunction. (5x½=2½)

61. The children danced. The proper played a tune.
_____
_____

62. You will not succeed. You word hard.
_____
_____

63. He worked hard. He failed in the exam.
_____
_____

64. Accept my advice. You will come to grief.
_____
_____

65. The hunter took the gun. He shot the bird.
_____
_____

VII.a. Fill the blanks with *a* or *an* whichever is correct. (5x½=2½)
66. He went to _____ union office yesterday.
67. _____ elephant is a strong animal.
68. He joined _____ University in US.
69. I shall be back in _____ hour.
70. My neighbor is _____ European.

3

b. Fill the blanks with *the*, wherever is necessary. If *the* is not needed write 'x' in the blank. 5x ½ = 2 ½

71. The plate is made of _____ copper.
72. Let us play _____ cricket.
73. Many ships cross _____ Atlantic Ocean.
74. _____ meat prepared for dinner was tough.
75. My daughter plays _____ piano.

IX. Choose the correct proposition from the given pair and fill the blanks. 10x ½ =5
76. The ball went out _____ the window. (through/in)
77. I have been looking for her _____ four seeks. (for/since)
78. She was born _____ July. (in/on)
79. He has been playing cricket _____ 1995. (since/for)
80. She is angry _____ me. (with/on)
81. They walked six miles _____ foot. (by/on)
82. The property was divided _____ two brothers. (among/between)
83. We are now confident _____ winning the match. (of/in)
84. There was a fight _____ Ram and Sita yesterday. (among/between)
85. The rat was killed _____ a stick. (with/by)

X. a. Say whether the sentence is *simple/compound/complex.* 5x ½ =2 ½
86. Jumping over the wall the thief escaped. _____
87. When he went to Delhi he met his uncle. _____
88. She opened the door and went out. _____
89. The clerk went out to post the letters. _____
90. As he was blind he could not cross the road. _____

XI. Answer the following questions. 10x ½ =5
91. Where were you born?

92. What is your ambition?

93. When did you pass your X std.?

94. What is your father?

4

95. Where do you come from?

96. How old are you?

97. Why did you select this course?

98. What is your favourite game?

99. When will you complete this course?

100. Where did you have your school education?

VOCABULARY

XII. A. Fill the blanks choosing a word from the list given. 5x ½ = 2 ½

| era; prevalent; acquisition; various; cease |

Many deadly diseases were _____ (101) in the previous _____ (102). The _____ (103) of knowledge about the disease and cure helped many patents. _____ (104) systems have been formed not only to cure the disease but also to prevent them. This has helped to _____ (105) the spread of many diseases.

B. Choose the best synonyms of the following words from the choices given below each.

5x ½ = 2 ½

106. **FRAGMENT**
a) large   b) small   c) piece   d) whole

107. **DYED**
a) coloured   b) lost   c) gained   d) cleaned

108. **TRENDY**
a) ugly   b) costly   c) cheap   d) fashionable

109. **CUSTOMARY**
a) unusual   b) regular   c) usual   d) normal

110. **ANCIENT**
a) modern   b) old   c) previous   d) present

5

C. Match with the words in A the antonyms in B   5x ½ = 2 ½

A	B	Answers
111. natural	a) deleted	111.
112. added	b) complicate	112.
113. warmth	c) artificial	113.
114. proud	d) cold	114.
115. simplify	e) humble	115

D. Choose the best antonyms of the following words from the choices given below each.
5x ½ = 2 ½

116. INTACT
a) unchangeable   b) changeable   c) neat   d) attractive   [ ]
117. ACCEPTANCE
a) receiving   b) agreeing   c) rejection   d) strength   [ ]
118. SOFTNESS
a) hardness   b) kindness   c) madness   d) quickness   [ ]
119. GLORIFY
a) praise   b) appreciate   c) blame   d) create   [ ]
120. INTRODUCTION
a) knowledge   b) conclusion   c) nearness   d) beauty   [ ]

PART B (Marks: 20)

I.   Read the following letter and supply the missing words. (Rewrite the letter on your
answer book)   5

_____
_____
_____
_____

My dear_____

_____ you for your kind letter. Pleased to know that you _____ the second prize in
essay competition. Please accept my _____.
        Yesterday our class played a 10 over cricket match with II year students. We _____
the toss and _____ to bat. We lost first three wickets for 15 runs. Then I _____ our
captain and we put on a partnership of 32 runs. We were all out for 64 runs. Our opponents
were shot out for 58 runs. So we _____ the match.

Yours _____

_____

II. Complete the dialogue. (Write the full dialogue on the answer book) 5

Conversation between the headmaster and a pupil who has forgotten to bring his progress report

Headmaster: Have_____?
Pupil: I am sorry_____.
Headmaster: _____careless?
Pupil: I shall be careful in future, sir.
Headmaster: When_____?
Pupil: _____tomorrow, sir.

III. Read the following passage and answer the questions given below.   10

NEIL ARMSTRONG

One July afternoon in 1969, Neil Armstrong became the first man ever to set foot on the moon. That historic movement was later described as 'one step for man but a giant leap for mankind.' Today several countries send astronauts to space to conduct research. Let us get into the rocket to find out what is like up there. We must start at a very high speed of seven miles a second. At a lesser speed, the rocket will fall back on to the earth because of its gravitational pull. Once we are outside the earth's gravity, we will reach our destination in two days time. In the atmosphere there are particles of air, dust and water vapour which by scattering the sunlight make the sky appear blue. Once we leave these particles behind, the sky keeps changing colour ranging from shades of blue to black grey. Soon the sky is pitch dark and the sun, moon and stars appear brighter. When we look back, only half the earth's surface is visible, the rest being engulfed in clouds, mists and showers. But in front of us the surface of the moon is clearly visible with no atmosphere, no rains or fogs to subdue its brightness.

Answer the following questions.

1. Who is the first man to step on the moon?
2. Why should we start with high speed when we go into the space
3. Why does the sky appear blue?
4. When do we see the changing colour of the sky?
5. Why is only half the earth's surface visible?

INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION – APRIL/MAY 2015

1.2 APPLIED MATHEMATICS

TIME: 3 Hours

Max. Marks: 80

PART A

(2x10=20)

1) Find x if $\begin{vmatrix} x & 3 \\ 6 & 2 \end{vmatrix} = 0$

2) If $A = \begin{bmatrix} 1 & 3 \\ 3 & 4 \end{bmatrix}$, $B = \begin{bmatrix} 1 & 2 \\ 4 & 3 \end{bmatrix}$, Find A-B

3) Find the value of $\cos 15$

4) If $A + B + C = 180$, find the value of $\cos(A+B)$

5) If $y = \sqrt{x}$, find $\dfrac{dy}{dx}$

6) Differentiate $\tan(x^3)$ with respect to x

7) Evaluate : $\int e^{5x} \, dx$

8) Evaluate: $\int \dfrac{dx}{x^2 + 25}$

9) Find the distance between the points $P(1,-1)$ and $Q(5,2)$

10) Find the Mode of the following data:
120, 110, 130, 110, 120, 140, 130, 120, 140, 120

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PART –B

1. (a) Show that (4)

$$\begin{vmatrix} a & b & c \\ a^2 & b^2 & c^2 \\ 1 & 1 & 1 \end{vmatrix} = (a\text{-}b)\ (b\text{-}c)\ (c\text{-}a)$$

(b) Solve the following simultaneous equations using Crammer's rule. (8)

$$\begin{aligned} x + y + z &= 3 \\ 2x - y + z &= 2 \\ 3x + 2y - 2z &= 3 \end{aligned}$$

OR

(c) If $A = \begin{bmatrix} 2 & 1 \\ 3 & 2 \end{bmatrix}$, $B = \begin{bmatrix} 2 & -1 \\ -3 & -4 \end{bmatrix}$ then verify that $(AB)^T = B^T A^T$ (4)

(d) Find the inverse of the Matrix $\begin{bmatrix} 1 & 2 & 3 \\ 2 & 3 & 2 \\ 3 & 3 & 4 \end{bmatrix}$ (8)

2. (a) If $A + B = 45$, Prove that $(Cot\ A -1)(Cot\ B-1) = 2$ (4)

(b) Show that $\dfrac{Sin\ 3A}{Sin\ A} - \dfrac{Cos\ 3A}{Cos\ A} = 2$ (8)

OR

(c) If $A + B + C = 180$, prove that
$\tan A + \tan B + \tan C = \tan A \tan B \tan C$ (4)

(d) Prove that $\dfrac{Sin\ 2A - Sin\ 2B}{Cos\ 2A + Cos\ 2B} = \tan (A - B)$ (8)

3. (a) Differentiate $y = \dfrac{1}{4 + \tan x}$ with respect to x (4)

(b) If $y = \sqrt{\dfrac{1-x^2}{1+x^2}}$ then find $\dfrac{dy}{dx}$ (8)

OR

(c) If $y = Sin\ (Cos\ x)$, find $\dfrac{dy}{dx}$ (4)

(d) Find the differential co-efficient of $x\ Sinx\ Cos\ x$ (8)

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4. (a) Evaluate : $\int (tanx - cotx)^2 \, dx$ (4)

(b) Evaluate : $\int \dfrac{x \, dx}{\sqrt{a^2 + x^2}}$ (8)

OR

(c) Evaluate : $\int (2x + 5)^5 \, dx$ (4)

(d) Evaluate : $\int x \, e^x \, dx$ (8)

5. (a) Solve the following simultaneous equations:

$3x + 2y = 20$
$7x - 6y = 4$ (4)

(b) Prove that the points A(1,-1), B(5,2) and C(9,5) are collinear. (8)

OR

(c) Show that the points A(0,-1), B(6,7) and C(-2,3) and D(8,3) are the vertices of a rectangle. (4)

(d) Find the Mean and Median of the following frequency distribution: (8)

Classes	0-20	20-40	40-60	60-80	80-100	100-120	120-140
Frequency	6	8	10	12	6	5	3

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION APRIL/MAY, 2015

1.3 APPLIED PHYSICS

Time: 3 Hours   Max. Marks: 80

I)   **Answer the following in 2 or 3 lines.**   2x10=20
   a)   What are fundamental Quantities?
   b)   Name two physical quantities which have same dimensional formula?
   c)   Is temperature less the -273° C. is unattainable in Kelvin scale. Give reason?
   d)   Define pressure co-efficient of gas?
   e)   The critical angle for glass is 42°C. Calculate the refractive Index of glass?
   f)   Explain forced vibration?
   g)   In a wheat stone bridge resistance P= 2Ω, Q= 4Ω and R = 6Ω. What is the value of S?
   h)   Define Ohm's Law?
   i)   Explain Doping?
   j)   Draw the circuit of the working of a Half wave rectifier?

Answer all questions in detail:

II   a)   Name the physical quantities represented by the following dimensional formula.   4
            MT^{-2} , ML^2T^{-2}, MLT^{-2}, T^{-1}

      b)   Derive v = u + at is dimensionally correct.   8

                                 OR

      c)   Define unit? Write any two uses of dimensional formula?   4
      d)   Prove 1 Newton = 10^5 dynes by dimensionally method?   8

III) a)   State Boyle's law with neat diagram?   4
      b)   The volume of gas is 210 cc. at a temperature of 27° C. Find its volume if temperature
           is increased to 127° C. at constant pressure.   8

                                 OR

      c)   A certain volume of gas at 30°C. is heated at constant pressure, so that the volume
           becomes 3 times the original volume. Calculate the final temperature.   4
      d)   Derive an ideal gas equation?   8

IV).   a)   Define Snell's law, critical angle.   4

     b)   If the angle of minimum deviation in an equilateral glass prism is 60^0. Find the refractive Index of the prism.   8

OR

     c)   Write short notes on stationary waves?   4

     d)   If a tuning fork of frequency 425 HZ is sounded in air, what is the wave length of sound when the velocity is $340MS^{-1}$?   8

V).   a)   State and explain Coulumb's law in electrostatics?   4

     b)   3 resistors of Resistances 10 Ohms, 50 Ohms and 25 Ohms are connected in series. Calculate the equivalent resistances?   8

OR

     c)   Derive the equation for equivalent capacitance when the capacitors are connected in Series?   4

     d)   Three capacitors $5\mu f$, $4\ \mu f$ and $3\ \mu f$ are connected with the first and the second in series and the third is parallel with them. Find the capacitance of the combination?   8

VI)   a)   Explain the working of a diode in forward bias?   4

     b)   Define logic gate? Describe AND gate with truth table?   8

OR

     c)   Describe P- type Semi conductor with neat diagram of its bonding structure?   4

     d)   Describe working of N-P-N transistor with neat diagram?   8

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION – APRIL-MAY, 2015.

1.4 APPLIED CHEMISTRY

Time: 3 Hours   Max.Marks: 80

I) Answer the question in two or three sentences.   **(2x10=20)**

1. What are the sources of water?
2. Give two example of oxidizing agents.
3. Define the term of pH.
4. Write 2 physical properties of Sodium Sulphate.
5. Write the chemical formula of Sodium Hydroxide and Hydrogen Peroxide.
6. What is the role of Rongalite C in Textile Printing?
7. Define addition reaction.
8. Define esterification reaction.
9. Give any two examples of carbohydrates.
10. What are the uses of fructose?

Answer the following in detail.

II a) What are the disadvantages of hard water?   **(4+8=12)**
   b) Explain in detail about softening of water by permutit and calgon methods.

(OR)

   c) Define "expressions of Hard water".
   d) What are the types of catalysts? Explain briefly.

III. a) Mention the uses of sodium hydrosulphite.   **(4+8=12)**
   b) Describe the physical and chemical properties of sulphuric acid.

(OR)

   c) Write the uses of Glauber's salt.
   d) Describe the physical and chemical properties of Sodium Hydroxide.

IV. a) Write the properties of Sodium Chlorite.   **(4+8=12)**
   b) Describe the large scale manufacturing process of bleaching powder.
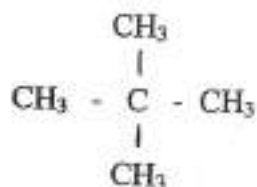
(OR)

   c) Mention the properties of Sodium Sulphoxylate formaldehyde.
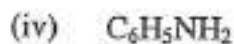   **d)** Describe the large scale manufacturing process of Hydrogen Peroxide.

V. a) Write the IUPCA name of the following compounds.   (4+8=12)

    (i)   HCOOH,   (ii) CH_3-CH_2-OH (iii)

$$CH_3 - \overset{\overset{\displaystyle CH_3}{|}}{\underset{\underset{\displaystyle CH_3}{|}}{C}} - CH_3$$
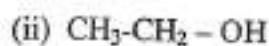
    (iv) $C_6H_5NH_2$

b) Write the physical and chemical properties of Benzene.

(OR)

c) Discuss the classification of organic compounds with examples.

d) Write the physical and chemical properties of Anthracene.

VI. a) Give the chemical structure of wool and cotton.   (4+8=12)

    b) (i) Define soap and their uses.

       (ii) Describe polysaccharides with example.

(OR)

c) Give the classification of carbohydrates.

d) Write short notes on (i) Addition polymerization, (ii) Condensation polymerization.

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DIPLOMA IN HANDLOOM AND TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION – MAY – 2015

1.5 FIBRE & YARN TECHNOLOGY

Time: 3 Hours   Max. Marks: 80

PART - A

Answer all questions in 2 or 3 sentences.   2 x 10 = 20 Marks.

1) Define textile fibre.
2) What are the objectives of carding in spinning process?
3) Write the objectives of combing.
4) Write down two properties of Nylon -6 fibre.
5) Write down two end uses of Acetate rayon.
6) Write down two physical properties of Woolen yarn.
7) Name the stages of the life cycle of Silk worm.
8) What is Open End spun yarn?
9) Write down the two end uses of Industrial textile yarn.
10) Define Knitting.

PART – B

I.   (a) Draw the flow diagram showing the classification of textile fibre.   4
     (b) Explain the working principle of Ring Spinning Frame with a neat diagram.   8

OR

     (c) Write the chemical properties of Silk.   4
     (d) Explain the operating principle of carding engine with neat diagram.   8

II.   (a) Write the main properties of Viscose rayon.   4
     (b) Explain the production process of Acetate rayon fibre with the help of flow chart
       diagram.   8

OR

     (c) Write the properties and uses of Nylon – 6.   4
     (d) Explain the production process of Nylon – 66 with the help of neat flow chart diagram.   8

III. (a) Write the chemical composition of Wool fibre.   4
      (b) Discuss the process of manufacturing of Filament Silk yarn with neat diagram.   8

OR

      (c) Enlist the post spinning process operations.   4
      (d) Explain the Reeling process with neat diagram.   8

IV.   (a) Differentiate between Woolen and Worsted yarn.   4
      (b) Briefly explain the formation of cotton yarn in Rotor spinning with neat diagram. 8

OR

      (c) What is Friction spun yarn?   4
      (d) Compare the properties of Ring spun yarn with Open-End spun yarn.   8

V.   (a) Write different uses of Crimped yarn.   4
      (b) Explain construction and sizes of Sewing thread.   8

OR

      (c) Enlist the steps involved in garment making process.   4
      (d) Explain with neat diagram the manufacturing process of tufted carpets.   8

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION – APRIL/MAY 2015

TECHNOLOGY

1.6 WEAVING ~~THEORY~~ & TEXTILE CALCULATIONS

TIME: 3 Hours   **Max. Marks: 80**

I.   Answer all questions in two or three sentences.   (2x10=20)

1. What are the essential qualities of a warp yarn?
2. What are the objects of weft winding?
3. What are the functions of reed?
4. What are the functions of lease rod?
5. What are the two types of take-up motions used on handlooms?
6. What are the advantages of crossed shed weaving?
7. If one bundle of cotton yarn contains 260 hanks, what is the count of yarn in Ne system.
8. Calculate the length of 50 grams of 30 Denier (Metric) silk yarn.
9. Convert 200 metric count to Ne cotton count.
10. Convert 32^s Ne cotton count to Denier metric.

Answer all questions in detail

II.   a) What are the objects of warp winding ?   (4)

        b) Explain the method of preparation of warp on a sectional warping machine.   (8)

OR

        c) What are the qualities imparted to the yarn by an ideal sizing?   (4)

        d) Explain about the sizing ingredients used in the size mixture for cotton
        and their functions.   (8)

III.   a) What are the functions of slay?   (4)

        b) Explain about different heald reversing motions used on handlooms.   (8)

OR

        c) What are the different types of temples.   (4)

        d) Explain about different motions of weaving.   (8)

IV.   a) Name four different types of shuttles used in the Handloom Industry.   (4)

        b) Explain the path of warp on a Handloom with neat diagram.   (8)

OR

        c) What are the advantages of all metal reeds?   (4)

        d) Explain different types of Shedding with neat sketches.   (8)

V. a) Calculate the weight in grains of 300 yds of 32^s cotton yarn (Ne). (4)

b) (i) If 90 yds of cotton yarn weighs 100 grains, calculate the count in
decimal system. (4)

   (ii) The count of 250 yds of worsted yarn was found to be 40^s worsted.
Calculate its weight in grams. (4)

OR

c) Calculate the weight in grammes of 1500 mtrs of a acetate Rayon whose
count in 100 Denier metric. (4)

d) (i) Calculate the length of 5 ounces 10 drams of thrown silk whose count
is 120 drams. (4)

   (ii) Calculate the count (Denier Metric) of 300 Mts. Of nylon yarn which
weighs 100 grams. (4)

VI. a) Convert 40^s Nf cotton count to metric count. (4)

b) (i) Derive the conversion factor for converting Nf cotton system to
Decimal System. (5)

   (ii) Convert 40^s decimal count to Nf cotton. (3)

OR

c) Convert 50 Denier English count to Denier metric system. (4)

d) (i) Derive conversion factor for converting Denier metric count to
Denier English System. (5)

   (ii) Convert 0.75 lbs / spindle count to Denier English. (3)

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
FIRST YEAR EXAMINATION APRIL/MAY, 2015

1.7 FABRIC STRUCTURE-I

Time: 3 Hours   **Max. Marks: 80**

I.   **Answer in two or three lines**   (2x10=20)

     a)   Draw interlacement diagram showing warp up and weft up separately.

     b)   Draw interlacement diagram for 2 and 2 warp rib.

     c)   Name any three types of drafting order.

     d)   What is the drafting order followed for weaving plain with 4 heald shafts.

     e)   Minimum how many ends and picks are required for constructing a weave?

     f)   What is the weave used in denim fabric?

     g)   Construct satinette weave

     h)   Construct 2 and 2 twill weave.

     i)   Suggest a weave for 1,2,1,3,4,3 drafting order.

     j)   Suggest a weave for 1,1, 2,2 drafting order.

Answer all Questions in detail.

II.   a) What is the relation between design, draft and peg plan.   (4+8=12)

     b) What are the different methods of ornamentation of plain weave.

OR

     c) Draw thread interlacement diagram for plain weave.

     d) What are the different classifications of woven fabric?

III.   a) Give one example each for plain derivatives.   (4+8=12)

     b) Construct $\dfrac{4}{1}\dfrac{1}{1}$ twill with drafting order.

OR

     c) Give one example for warp faced, weft faced and equal faced twill.   (4+8=12)

     d) By taking $\dfrac{3}{2}\dfrac{1}{2}$ twill as base weave construct wavy twill across the cloth.

IV.   a) Name two weaves used in Satin dice-Check.   (4+8=12)

     b) Construct possible regular sateen weaves on 8 threads.

OR

     c) Name two weaves used in twill dice-check.   (4+8=12)

     d) construct any two possible regular sateen weaves on 10 threads.

V. a) Construct mock-leno weave on 6x6.

b) Construct honey comb weave on 6x6 with drafting order and peg plan.

(4+8=12)

OR

c) What is the effect produced by ordinary honey comb weaves and how?

d) Construct Huck-a-back weave on 10x10 with drafting order and peg plan.

(4+8=12)

VI. a) What is the base weave on which corkscrew weaves are constructed.

b) Show colour and weave effect by using the following details:-

Weave : Plain

Warp colouring order with 2 colours - 1:1

Weft colouring order with 2 colours - 1:1

(4+8=12)

OR

c) What are the different methods of constructing crepe weaves?

d) Construct a crepe weave on 8x8 using a sateen base with drafting order.

(4+8=12)

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.1 WEAVING TECHNOLOGY & TEXTILE CALCULATIONS-III

TIME: 3 Hours   **Max. Marks: 80**

Answer all the questions.

I.   The answer for each question should be in two or three sentences.   **(2x10=20)**

a)   What are the advantages & disadvantages of side weft fork motion?

b)   Mention differences between Single lift dobby and double lift dobby.

c)   What are the mechanisms make an ordinary powerloom into an automatic powerloom?

d)   What are the different types of drop wires used in warp stop motion?

e)   Calculate the efficiency of a warping machine if its calculated rate of warping in 920 meters/min. but actually producing 736 meters per min of warp.

f)   A super speed beam warper with a warping speed of 880 yard/min. is producing a standard warp with overall efficiency of 84%. Calculate total length of warp produced in 8 hours.

g)   The width of warp is required to be 40 inches. The number of sections in the warp is 8. Calculate the width of each section.

h)   A weaver's beam contains 50 Kgs. of sized warp and is 1000 meters of long with 2000 ends. Calculate the count of sized warp in Tex System.

i)   Calculate the average rpm of weaving shed containing 520 loom with the following partuculars.

Number of loom	RPM
120 looms	210
200 looms	200
200 looms	180

j)   Write the formula for calculating Actual production in yards per loom per hour.

Answer all the following questions in detail.

II.   a) Compare between the loose reed and fast reed mechanism.   **(4)**

b) Explain with a neat sketch the working of loose Reed Mechanism.   **(8)**

OR

c) Compare between the side weft fork and centre weft form mechanism.   **(4)**

d) Explain the working mechanism of the Climax Dobby used in powerlooms with a line diagram.   **(8)**

III.   a) What are the advantages of Automatic powerlooms?   **(4)**

b) Explain the working of a cop changing mechanism.   **(8)**

OR

c) Draw a layout diagram of a powerloom shed.   **(4)**

d) Explain with a neat sketch the working of mechanical warp stop motion.   **(8)**

IV.   a) The length of warp on a warper's beam is 3600 yards and the number of ends in the warp is 420. The weight of warp in the beam is 900 pounds, calculate the beam count.   **(4)**

b) A super speed beam warping m/c is required to supply 50,000 mts. of warp with 3234 ends from a set of warp back beams. The count of warp is 20 Tex. If the capacity of warping creel is 480, calculate the following.

  i)   No. of ends on each back beam.

  ii)   No. of backs beams to be made.

  iii)   Weight of warp yarn on each back beam.   **(8)**

OR

c) Calculate quantity of warp yarn required in lb for production in warping machine 8 hours per shift with a calculate speed of 210 yds per minutes with efficiency of 75%. The count of yarn is 20^s. Allow 5% wastage also. (4)

d) Calculate the quantity of yarn in pounds required for a set of 6 back beams. The length of warp on each beam is 24000 yards and number of ends on each beam of 462. Count of warp is 36' cotton. Allow 1.5 percentage waste during warping. (8)

V. a) A striped warp is to be prepared on a sectional warping machine with a creel capacity of 400 bobbins. There are 80 stripes in a warp each containing 40 ends per repeat of pattern. 20 selvedge ends are extra on each side. Calculate the number of sections to be made and No. of ends in each section. (4)

b) The calculated production of a slasher in 100 yards per min. The count of un sized warp is 40's cotton and the efficiency of the machine is 75%. The size percentage put on the warp is 10%. Calculate the following.
    i)   The actual production in lb per day for 8 hours.
    ii)   The total weight of sized warp in lb produced in 8 hours. (8)

OR

c) A warp containing 2500 ends and 3200 mts long has to be sized with 25% size on it. If the count of warp yarn is 16 Tex, calculate the weight of size in kgs. to be put on the warp. (4)

d) 44's cotton unsized warp containing 2400 ends with 1680 yards length. If the sized warp weighs 120 pounds, calculate the percentage of size put on the warp and sized warp count. (8)

VI. a) The actual production per min per spindle of pirn winding machine is 672 yards of 12's cotton yarn. Calculate the time that will be required to wind 1200 pounds of yarn in 30 spindles. (4)

b) The time taken to a wind a full pirn on pirn winding machine without any stoppage is 2.5 minutes. The weight of yarn on the pirn is 50 grams and the count of the yarn in 30 Tex. Calculate the production in Kgs. of a machine with 20 spindle/shift of 8 hours, if the efficiency is 80%. (8)

OR

c) A-loom is running with 216 picks per min and picks per inch in the cloth of 60, but actually 254.5 yards of cloth produced in 53 hours. Calculate the running efficiency of the loom. (4)

d) A cloth with 44 picks per inches to be woven on a loom running at 200 picks per min. The width of the cloth on the reed to be woven is 52 inches and the efficiency of the loom is 76%. If the weft pirn contains 1.21 oz. of 30's cotton yarn, calculate the number of pirns required to run the loom per hour. (8)

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.2 FABRIC STRUCTURE & ANALYSIS-III

TIME: 3 Hours   Max. Marks: 80

PART – A

Answer all the questions.

I.   The answer for each question should be in two or three sentences.   (2x10=20)

i)   Write down any two differences between wadded double cloth and treble cloth.

ii)   A treble width plain cloth is woven on a handloom keeping reed width of 30 inches. What will be the width of that woven fabric when laid as single layer on a table?

iii)   Write any two salient features of backed cloth.

iv)   Give any two reasons for using wadding threads in the backed cloth.

v)   In which fabric 'Face to Face' principle is used?

vi)   Give two examples of weft pile fabrics.

vii) Why terry pile fabrics are preferred for toweling fabrics?

viii) Why two warp beams are used while weaving Terry towels?

ix)   Write any two points on how to indentify warp and weft in a given fabric sample.

x)   Write down the formula to find weight per square meter (GSM) from a given fabrics watch of 10cm x 10cm.

PART – B

Answer all the following questions in detail.

II.   a) Why wadding threads are used in double cloth?   (4)

b) Construct warp wadded double cloth with self stitching using 2/2 twill for both face and back weave. Keep the weft order 1 face 1 wadding 1 back.   (8)

OR

c) Differentiate warp wadding from weft wadding.   (4)

d) Taking 12 ends and 12 picks, construct treble width plain fabric and show the the weft interlacement diagram separately.   (8)

III. a) List down the differences between warp backed and weft backed fabrics.   (4)

b) Construct a design for warp wadded weft backed fabric taking the base weaves of 1up 4down twill for face and 4 up 1 down for back.   (8)

OR

c) Among warp backed and weft backed fabrics, which one will give higher production? Justify your answer.   (4)

d) Construct a design for weft wadded warp backed fabric with base weaves of 3up 1down twill for face and 1up 3down twill for back.   (8)

IV. a) Differentiate between loop piles and cut piles. (4)

b) Draw a design and thread interlacement diagram for a warp pile fabric produced with the aid of wires. (8)

OR

c) Mention any 4 differences between velvet and velveteen fabrics. (4)

d) Discuss the techniques involved in the manufacturing of chenille Axminster carpet. (8)

V. a) Draw 4 pick Terry design. (4)

b) Draw graph design and thread interlacement diagram for 3 pick and 4 pick terry weaves. (8)

OR

c) Draw a 5 pick terry weave. (4)

d) Taking 16 ends and 16 picks, show the stripe effect of terry design using 4 pick terry weave. Mention proper colouring order of warp threads. (8)

VI. Analyse the given fabric swatch and furnish the following particulars for its re-production. (2+2+4+2+2)

   i) Ends per inch   ii) Picks per inch   iii) Weave   iv) Draft   v) Peg plan

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.3 CHEMICAL PROCESSING OF TEXTILES-II

TIME: 3 Hours

Max. Marks: 80

I. Answer all the questions in two or three sentences.   (2x10=20)
- i) What are the various methods of degumming of silk?
- ii) Name four varieties of silk.
- iii) Write the receipe for Nylon bleaching.
- iv) Write the receipe for wool bleaching.
- v) Why acid dyes are called acid dyes?
- vi) Why metal – complex dyes are preferred to chrome dyes?
- vii) Why wet fabric is loaded on Jigger?
- viii) What do you understand by the term "Percentage Expression"?
- ix) Give four examples of natural dyes.
- x) What is the use of Grey scale & staining scale?

Answer all the questions in detail.

II. a) Draw a neat diagram showing morphological view of silk fibre.   (4)
     b) Explain in detail the Emulsion Scouring of wool.   (8)

OR

c) Explain solvent scouring method for wool.   (4)
d) Explain in detail Alkali Degumming of silk.   (8)

III. a) What do you understand by term "Bleaching"? Why bleaching of wool is done?
     What are different bleaching methods for wool?   (4)
     b) Explain in detail the bleaching of silk with Hydrogen peroxide.   (8)

OR

c) How scouring of Polyester is done?   (4)
d) Compare Potting, Crabbing & Decatising processes.   (8)

IV. a) What is the role of electrolyte in dyeing of wool with Acid dyes?   (4)
     b) Explain in detail the dyeing of silk with Acid dyes.   (8)

OR

c) Why metal complex dyes are preferred to Acid & Chrome dyes?   (4)
d) What are reactive dyes? Explain any one method of dyeing of silk with reactive dyes.   (8)

V. a) Draw a neat diagram of Vertical Drying Range (VDR).   (4)
b) Explain the working of a Jigger with a neat sketch showing all parts & their
functions.   (8)

OR

c) Differentiate between treatment of cloth on Jigger & Winch.   (4)
c) Draw & explain working of Cabinet Hank Dyeing machine.   (8)

VI. a) What are the advantages of Natural dyes in comparison to synthetic dyes?   (4)
b) Explain in detail Rubbing fastness test with a neat diagram.   (8)

OR

c) What do you understand by term "Oxidation Marks"? How will you get them
corrected during dyeing process?   (4)
d) Explain in detail the criteria for selection of dyes.   (8)

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INDIAN INSTITUTE OF HANDLOOM TECHNOLOGY
BARGARH/GUWAHATI/JODHPUR/SALEM/VARANASI/CHAMPA/KANNUR/KHTI-GADAG/SKPMIIHT-VENKATAGIRI

DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
IV SEMESTER EXAMINATION – APRIL/MAY 2015

4.4 PROFESSIONAL ETHICS AND PERSONALITY DEVELOPMENT

TIME: 3 Hours   Max. Marks: 80

I.   Answer all the questions in two or three sentences.   (2x10=20)
   i)   Explain importance of civic virtue.
   ii)   What are the three stages in which behavioural pattern between an employer & employee is addressed?
   iii)   What are the four main character traits that help an individual to develop their character.
   iv)   Describe the emotional intelligence skills of Emotional Mastery or Courage.
   v)   What are the main criticism of Kohlberg's theory as proposed by Carol Gilligan?
   vi)   What is code of Ethics?
   vii)   What are importance of Goal's in one's life?
   viii) Why there is need to decide on career plan?
   ix)   What are barriers (any two) to Effective listening?
   x)   Classify and name different types of communications.

Answer all the questions in detail.

II. a) Explain the relationship between Morals, Value & Ethics .   (4)
     b) What is Ethics? Explain each one in detail.   (8)

OR

     c) Why is integrity of an employee important in an organization?   (4)
     d) Write short notes on importance of a positive-relationship between an employer & employee in an organisation.   (8)

III. a) Explain meaning of the term "Work – Place – Spirituality".   (4)
     b) Explain the ten basic skills/qualities that one must develop to achieve development in all spheres in one's personality.   (8)

OR

     c) What do you mean by "Moral-Dilemmas"? Explain it with help of an example. (4)
     d) Explain the terms: (i) Respect for others.
                               (ii) Respect for self.   (8)

IV. a) Explain the level of Moral Development as proposed by Lawrence Kohlberg. (4)

b) What is meant by Safety and Risk Assessment? What are importance and process of Risk Assessment? (8)

OR

c) Explain the specific ways in which Engineering societies can promote Ethics. (4)

d) Explain the relationship between Law & Ethics with a suitable example. (8)

V. a) What is meant by "Perception"? Write down sub process of perception. (4)

b) What are the steps towards successful goal setting? (8)

OR

c) What is "Self-Esteem". What are it's importance to an individual. (4)

d) Define "Attitude". Can Attitude be changed? Explain. (8)

VI. a) What are different types of Body languages? (4)

b) What is communication? Explain the principles & barriers to effective communication. (8)

OR

c) What are different methods to maintain a strong organizational culture? (4)

d) What is Time Management? Explain Time-Management with reference to Pickle – Jar Theory. (8)

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
SIX SEMESTER EXAMINATION APRIL/MAY, 2015

6.1 WEAVING TECHNOLOGY AND TEXTILE CALCULATIONS-V

Time: 3 Hours **Max. Marks: 80**

I. Answer all questions in one or two lines 2x10=20

a) Give name of any two States where Ikat fabrics are produced.

b) Give name of any two States where traditional silk sarees are produced.

c) Name two harness ties suitable for Handloom Industry.

d) What is the advantage of Sectional tie?

e) Write the formula to calculating count in the required fabric while changing the weight of fabric to maintain same level of compactness.

f) Write formula for calculating of maximum threads per inch for given weave.

g) What are different systems of Harness building?

h) Write the formula to calculate tape length from given cloth sample.

i) Write the formula to calculate total picks per repeat of design in the jacquard sample.

j) Write the formula to calculate total ends per repeat of design in the Jacquard sample.

Answer all questions in detail.

II. a) Write short note on Paithani weaving of Aurangabad. 4

b) Explain Jala weaving of Varanasi. 8

OR

c) Write short note on characteristics of Jamdani Saree. 4

d) Explain Warp and weft Tie & Dye technique with respect to design preparation and design transfer. 8

III. a) With short note on 'Casting out' of Jacquards. 4

b) With neat sketch, explain the London system of harness building 8

OR

c) Explain pointed harness tie for jacquard with neat sketch. 4

d) With neat sketch, explain the Norwich system of harness building. 8

IV. a) A cloth is woven using 10^s yarn with 36 threads/inch. What count of yarn is to be used to have 48 thread/inch to get same compactness. 4

b) A 2/2 twill cloth having 72 ends/inch and 64 picks/inch is required to change to plain weave. Find out the ends/inch and picks/inch in the plain cloth to keep the same compactness. 8

OR

c) A plain cloth is made with 60^s warp and weft having 84 ends/inch and picks/inch. It is required to produce a fabric with same compactness but 8% heavier. What count of yarn should be used in new fabric.. 4

d) A plain fabric woven with 20 Tex warp and 30 Tex weft is required to change to twill weave. Find out the count of warp and weft in the twill cloth to keep the same compactness. 8

P.T.O.

V. **a)** Calculate total number of ends in the cloth of 50" width having 48 ends/inch. It has ½" selvedge on each side drawn 4 per dent. 4

b) Calculate weight of warp and weft present in 1000 yard of cotton fabric with the following particulars:- 8

Count of warp	-	30^s
Count of Weft	-	24^s
Ends/inch	-	60
Picks/inch	-	48
Warp crimp	-	5%
Weft Crimp	-	4%
Cloth width	-	40 inches.

OR

c) Calculate total number of ends in the cloth of 100 cms. width having 20 ends per cm. It has 1 cm. selvedge on each side drawn 4 per dent. 4

d) Calculate weight of warp and weft present in 1000 Mtrs. of cotton fabric with the following particulars:- 8

Count of Warp	:	20 Tex
Count of Weft	:	24 Tex
Ends/Cm.	:	24
Picks/Cm.	:	20
Warp Crimp	:	4%
Weft Crimp	:	5%
Clothe width	:	120 cms.

VI. Calculate the cost of a piece of cloth woven with the following particulars:- 12

Width of cloth	:	60 inch – Selvedge ½" on each side drawn 4/dent
Length of cloth	:	180 yards,
Ends/inch	:	72
Picks/inch	:	60
Cost of 2/20^s warp	:	@ Rs. 1200 per bundle of 10 lbs
Cost of 10^s weft	:	@ Rs. 900 per bundle of 10 lbs.
Weaving charges	:	Rs.26/- per yard
Preparatory charges	:	15% of weaving charges
Other charges	:	10% of weaving charges
Crimp of warp	:	5%
Crimp of Weft	:	8%
Waste of warp	:	3%
Waste of weft	:	2%

OR

Calculate the cost of piece of cloth woven with following particulars: 12

Cloth length	:	1000 Mts.
Cloth Width	:	120 Cms.- Selvedge 1cm. on each side drawn 4/dent
Count of Warp	:	10 Tex
Count of Weft	:	15 tex
Ends per Cm.	:	30
Picks per Cm.	:	24
Crimp of warp	:	4%
Crimp of Weft	:	5%
Waste of Warp	:	2%
Waste of Weft	:	3%
Cost of warp	:	Rs.300 per kg.
Cost of Weft	:	Rs. 240 per kg.

Conversion charges Rs. 40 per meter   Other charges 10% of production cost.

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
VI SEMESTER EXAMINATION – APRIL/MAY 2015

6.2 FABRIC STRUCTURE & ANALYSIS-V

TIME: 3 Hours

Max. Marks: 80

I. **Answer all the questions in one or two lines.** (2x10=20)

   i) Mark Double equal plain cloth weave (L+D) on 4x4

   ii) Mark Four pick Terry weave (both side pile) on 4x4

   iii) Name two series of warp used in weaving Weft face Tapestry.

   iv) Give two salient features of Traditional Tapestry.

   v) Name two methods of controlling floats in ground portion of Extra Warp weaving.

   vi) Name the type of drafting order used for Extra warp weaving.

   vii) Name two Traditional Silk Sarees of India.

   viii) Name two Traditional woolen Shawls of India.

   ix) Find out Ends per inch in the sample supplied to you.

   x) Find out Picks per inch in the sample supplied to you.

Answer all the questions in detail.

II. a) Give simple sketch of Sectional Harness with Sectional Draft for weaving figured Double cloth. (6)

   (b) Indicate Figured Terry Structure of 3 Pick Terry weave (Both side Pile) on 36x36 using base motif on 9x12 (6)

OR

   (c) Briefly indicate the three methods of weaving Figured Terry fabric. (6)

   (d) Indicate figured interchanging Double equal plain cloth structure - Two Colour effect on 36 x 36. (6)

III. (a) Mark three weaves of Three picks Weft tapestry structure. (6)

   (b) Using Table, give the Punching procedure for punching cards from the Four coloured simple weft Tapestry figured graph along with operation of healds. (6)

OR

   (c) Mark any three weaves of Four picks Weft tapestry structure. (6)

   (d) Using Table, give the Punching procedure for punching cards from the Three coloured simple Weft Tapestry figured graph along with operation of healds. (6)

IV. (a) Using an illustrative diagram, show the three different methods of controlling floats in Extra weft weaving. (6)

(b) Construct Extra warp graph with suitable binding marks using the following particulars. (6)

Base Extra warp design	: 12 ends x 12 picks
Warp order	: 1 ground end : 1 Extra warp end
Ends per repeat of Extra warp Design	: 24 ends (12 ground +12 extra warp)
Picks per repeat of Extra Warp Design	: 48 picks (12 figuring picks + 36 extra ground picks).

OR

(c) Differentiate between Extra Warp and Extra Weft weaving techniques (Only 6 points). (6)

(d) Construct Extra weft graph with suitable binding marks using the following particulars. (6)

Base Extra weft design	: 12 ends x 12 picks
weft order	: 1 ground pick : 1 Extra weft pick
Picks per repeat of Extra weft Design	: 24 picks (12 ground +12 extra weft)
Ends per repeat of Extra weft Design	: 48 ends (12 figuring ends + 36 extra ground ends).

V. (a) Compare the traditional features of Banaras Silk Sarees with Kancheepuram Silk Sarees (only 6 points). (6)

(b) Taking a small diamond graph design with 2 colours for the diamond and third colour for ground, illustrate the methodology of doing Tie-dye. (6)

OR

(c) Compare the traditional features of Paithani Sarees with Jamdhani Sarees (only 6 points) (6)

(d) Draw simple pencil sketch lay out of any Traditional Saree indicating the important features like Pallau, Border, Body, Butta, Extra warp design and Extra weft design. (6)

VI. a) Analyze the sample supplied to you and find its Weave. (6)
b) Indicate the Draft and Peg-plan of the derived weave. (6)

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
SIXTH SEMESTER EXAMINATION – APRIL-MAY, 2015.

6.3 CHEMICAL PROCESSING OF TEXTILES-IV

Time: 3 Hours   Max.Marks: 80

Answer all the questions in 2-3 sentences.   **(2x10=20)**

i.   What are the disadvantages of using Kerosene Water emulsion in pigment printing?
ii.   Which type of Reactive dyes are widely used in printing and shy?
iii.   What is the specialty of batik prints?
iv.   Differentiate between Acid & Pre-metalized dyes used for printing on silk.
v.   How nature of fibre affects selection of finishes?
vi.   Finishing adds value to the goods, justify.
vii.   Why improvement in Dye-uptake and Lusture cannot be achieved simultaneously during mercerization?
viii.   Give names of at least two formaldehyde free cross linking agents.
ix.   Name atleast two carcinogenic amines.
x.   Write the test for vat dyes in powder form.

Answer all the questions in detail.

1

a) Write sequence of operations used for printing of cotton with direct dyes with a suitable recipe.   (4)

b) Explain the method of printing cotton with reactive dyes and mention the functions of the chemicals used.   (8)

(OR)

c) What is the role thickener and hygroscopic agent in printing of cotton with direct dyes?   (4)

d) Describe the recipe, process conditions and role of chemicals/auxiliaries in printing of cotton with pigments.   (8)

II

a) Which type of dyes are suitable for batik printing and **why**?   (4)

b) How will you print silk with acid / pre-metalized dyes? Discuss about essential ingredients required.   (8)

(OR)

c) Write a brief note on tie & dye.   (4)

d) Describe the method of printing polyester with disperse dyes explaining the role of each component used in the print paste.   (8)

III

    a) Discuss the objectives of textile finishing in brief. (4)

    b) Describe a calendaring process used for producing silk like finish on cotton with all the process control measures. (8)

<div align="center">(OR)</div>

    c) Give a suitable classification of finishing processes. (4)

    d) What is the basic principle used in SANFORISING? Explain the parts and working of a sanforising machine with the help of line diagram. (8)

IV

    a) Describe the structural changes taking place during mercerization of cotton. (4)

    b) Explain the mechanism of crease formation in cotton. How will you apply durable press finish? (8)

<div align="center">(OR)</div>

    c) Differentiate between water proofing and water repellency. (4)

    d) Justify the need of softening textiles and give a suitable classification of softeners used in textile finishing. (8)

V

    a) Mention at least one toxicant/harmful chemical in preparatory processing, dyeing, printing and finishing of textiles with its safer alternative. (4)

    b) Give outlines of eco-friendly wet processing of textiles. (8)

<div align="center">(OR)</div>

    c) What is the concept of banned amines? (4)

    d) What do you understand by the term "bio-finishing"? Give outlines of the process. (8)

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DIPLOMA IN HANDLOOM & TEXTILE TECHNOLOGY
SIX SEMESTER EXAMINATION APRIL/MAY, 2015

6.4 PRINCIPLES OF MANAGEMENT AND ENTREPRENEURSHIP

Time: 3 Hours

Max. Marks: 80

I. Answer all questions in one or two lines

2x10=20

1. What are the different levels of Management?
2. What is EXIM BANK?
3. What are the functions of Weavers' Service Centre?
4. What are the functions of price policy?
5. Distinguish between MICRO and MACRO marketing.
6. Define Marketing Mix.
7. What are the methods of Collecting?
8. Why is Market research needed?
9. Define Entrepreneur.
10. What is meant by e-Business?

Answer all the following question in detail.

(4+8)x5=60

II a) What is the importance of Handloom Industry?
b) Write in detail the Socio-Economic Importance of Handlooms.

OR

c) What are the objectives of primary Handloom Weavers' Co-operative Society?   4
d) Explain organizational structure of Handloom Industry.   8

III. a) What are the problems of Handloom Weavers?   4
b) What is meant by Cluster(CLUSTER) Development of Handloom Industry?   8

OR

c) What is the scope of Handloom Exports?   4
d) What is the significance of product diversification of handloom products?   8

IV a) What is the difference between Market and Marketing?   4
b) Which are the objectives and importance of Marketing?   8

OR

c) Define Marketing Mix. What are the objectives of marketing mix?   4
d) What is Marketing planning? What is the importance of Marketing information.   8

P.T.O.

V a) Define PRICING? What are the important objectives of pricing?   4
   b) What are the sources for collection of primary and Secondary data.   8

OR

   c) Which are different types of Market Research and advantages?   4
   d) Discuss the Pricing Policy for Handloom Products.   8

VI. a) What is the significance of Rural Markets?   4
   b) What are the functions of Entrepreneurs?   8

OR

   a) What is the role of agencies in promoting Entrepreneurship?   4
   b) What is the role of Entrepreneuring in Economic Development?   8

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