Q. 1

A. Choose the correct answer and give reason. (08)

1) Heald shaft having ____________ motion.
   a. Linear motion
   b. Angular motion
   c. Simple harmonic motion
   d. Parabolic motion

2) If Loom speed = 240 pick/min, Width of loom = 40 inch and Time taken for the shuttle being 150 degree of revolution of the crank shaft. What will be the speed of shuttle in yds per minute?
   a. 120 yds/minute
   b. 360 yds/minute
   c. 220 yds/minute
   d. 640 yds/minute

3) According to pierce, cover factor (Kc) given by
   a. \[ Kc = K1 + K2 - \frac{K1K2}{28} \]
   b. \[ Kc = \frac{K1}{\sqrt{Ne}} + \frac{K2}{\sqrt{Ne}} \]
   c. \[ Kc = K1 + K - \frac{K1 + K2}{28} \]
   d. \[ Kc = \frac{K1}{\sqrt{Ne}} - \frac{K2}{28} \]

4) The Nonwoven fabrics manufactured using mechanical action are known as
   a. Spun bond
   b. Needle punch
   c. Hydro entangled
   d. Spun lace
B. Give the importance of simple harmonic motion in plain power loom (06)

C. Explain loop formation cycle in weft knitting process with neat sketch. (06)

Q.2 A. Give the construction of shuttle box. What are the objectives of shuttle checking devices? Explain different types of swell and its importance. (10)

B. Explain different types of reversing motions in Negative Tappet shedding. (06)

Q.3 A. Give the classification of Loom. Compare shuttle loom with shuttleless loom. Explain different weft insertion system in shuttleless loom. (08)

B. Explain the construction and working of side lever under pick mechanism with its advantages and disadvantages. (08)

Q.4 A. Give the objectives of weaving preparatory process. Which are the warp preparatory processes? Explain any one in brief. (10)

B. Give the function of following parts with neat sketch.
   a. Size box
   b. Connecting arm assembly in beat up
   c. Picking Tappet (06)

Q.5 A. Explain the basic construction of different parts in single jersey machine. (08)

B. Draw and define following structure.
   a. Rib structure
   b. Knit stitch
   c. 2up/1 down Twill
   d. Warp Knit Structure (08)

Q.6 A. Give classification of Nonwoven fabric. Explain different method of web bonding. (08)

B. What is Let-off? What are the causes of tension variation in Warp sheet? Explain negative let off mechanism. (08)

Q.7 A. Calculate production of cone winding machine having following data. (08)
   Drum speed : 2000 rpm
   Drum diameter : 3 inches
   No of drum : 120
   Shift hours : 7.5

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Efficiency : 85%
Count of yarn : 60 Ne
Find out actual production in kgs.

B. Find out eccentricity ration \((e)\) and sley eccentricity \((E)\) if length of crank is \(08\) inches and length of connecting arm is 12 inches: Also explain concept of sley eccentricity.

Q.8  A. Give objective of pirm winding. Draw pirm built and explain how pirm built take place.

B. Answer what happen if
1. Uneven sizing on warp sheet.
2. Pick variation in loom.
3. One thread loop break in weft knitting.

C. What are the precautions needs to take during weaving of blend yarn and charges recommended for weaving of synthetic yarn?