Q1. a. Fill in the blanks
   i. Denier is ................ Yarn numbering system.
   ii. Smaller the flocks, ............... is the efficiency in blow room.
   iii. Carding process facilities .........................
   iv. In slip cleaners, beaters are arranged on a line ............. upwards at .......... angle
   v. Rotational speed of saw tooth rollers lies between ............... and ............... r/min

b. Match the following
   i. Blow room
      a. Auto-lever
   ii. Combing
      b. Roving
   iii. Speed frame
      c. Lap formation
   iv. Draw frame
      d. Hopper feeder
   v. Ring frame
      e. Doffer, Licker-in and Flats

c. Define or explain the following terms
   i. Neps
   ii. Noll
   iii. Opening and cleaning: Denier v. Count

d. State true or false
   i. Carding process improves cohesion of fibers.
   ii. Hydrophilicity is important for spinnability
   iii. Combing process improves parallelization of fibers.
   iv. Lubricant added in spinning enhances spinning characteristics.
   v. Opening of fibers helps in removal of trash.

Q2. Write short note on the following
   a. i. Ring and traveler. ii. Yarn numbering system. iii. Licker-in and cylinder
      iv. Blending at draw frame stage

Q3. a. Discuss the role of cleaning machines and condensers.
   b. Discuss the concepts of Piano feed regulating motion.

Q4. a. Describe the processes involved in short staple system of spinning of yarn with a neat flow diagram.
   b. Explain the process parameter in draw frame with neat labelled sketch.

Q5. a. Discuss briefly the functions of the card with the help of a section diagram.
   b. Explain the working procedure in draw frame with neat labelled sketch.

Q6. a. Explain the working procedure of 3/3 drafting system of speed frame with neat labelled sketch.
   b. Explain the working procedure of cone winding machine with neat labelled diagram.

Q7. a. Discuss the working principle of Pneumatic Splicing Technique.
   b. Describe the working principle of TFO (two for one) twisting machine with neat labelled diagram.

Q8. a. Calculate the length of the yarn on the package of 80/2 cotton yarn with a tare weight of 4.165 lb.
   b. Calculate the production of yarn in oz/spindle/shift on a ring frame if the spindle speed is 16000/min, twist multiplier is 3.8, yarn count is 30/1 and efficiency of the machine is 93%.
   c. Calculate the TPI (twist per inch) on simplex, if the diameter of the black roller is 15/16
d. Write a short notes on: i. Gimp yarn ii. Loop yarn