PICKING
FAQ

1) 'Shuttle is actually catapulted by the picking system'. Explain the analogy with suitable diagram.

2) Describe the over-pick system with neat diagram. What are the various options available in over-pick system to change the time and strength of pick (shuttle velocity). Which options would you chose so that change in timing of pick does not influence the strength of pick and vice versa.

3) Mention the advantages of under-pick system as compared to over-pick system. Why over pick system is not used in automatic loom?

4) Why the parallel pick and link picking systems are used in case of under-pick systems. Describe one of the two systems with diagram.

5) Derive the relationship among loom speed, shuttle velocity, reed width and degree of crank shaft rotation available for the passage of the shuttle through the shed. Explain the inferences regarding the loom speed that could be drawn from this mathematical relationship.

6) Derive the expression for power requirement (in kW) for shuttle picking if P is loom speed in picks/min, m is the mass of the shuttle in kg, θ is the degree of crank shaft rotation available for the passage of the shuttle through the shed, R is the reed width in m and L is the length of the shuttle in m.

7) Prove that for straight line nominal movement of the picker, for a given maximum velocity of the shuttle, the peak acceleration is inversely proportional with the effective length of the stroke of the picker. Also show that maximum acceleration of shttule takes half time as compared to the time for maximum velocity.

8) A plain woven fabric is being produced on a shuttle loom equipped with cam shedding mechanism. The cams are having two equal dwells and each of them corresponds to 60^0 rotation of bottom shaft. If the shuttle mass is 500 g, shuttle length is 0.25 m and reed width is 1.75 m, then calculate the power requirement for picking in kW. Assume that the shuttle moves through the shed during the dwell period of the shedding cam.

9) Calculate the loom speed (PPM) if loom width is 150 cm, shuttle length is 25 cm, mean shuttle velocity during flight is 20 m/s and

duration of shuttle flight is equivalent to 1/3rd revolution of crank shaft.

10) What is the importance of shuttle checking system from loom design viewpoint? Describe the shuttle checking system used in a loom with neat diagram.