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B. Tech
PETX 8305

Sixth Semester Examination – 2008

**PROCESS CONTROL IN FABRIC
MANUFACTURE**

Full Marks – 70

Time : 3 Hours



Answer Question No. 1 which is compulsory
and any **five** from the rest.

The figures in the right-hand margin
indicate marks.

1. Answer all the questions in brief : 2 × 10
- (a) What is tailing percent in winding ?
 - (b) What is machinery audit ?
 - (c) What is cleaning efficiency in winding ?

- (d) What is knot factor ?
 - (e) Why warp is stretched during sizing ?
 - (f) Why after waxing of sized warp is performed sometimes ?
 - (g) Why control of relative humidity (RH%) is important in fabric manufacture ?
 - (h) How end breakage rate of warp in loom is expressed ?
 - (i) What do you mean by lashing-in ?
 - (j) What is the effect of reed parameter on weaving performance ?
2. (a) Discuss the need of process control in fabric manufacture department. 5
- (b) Give your comment on – control of fabric quality and control of cost of production.

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3. (a) Discuss the technique of -setting of norms and schedule of check for process control. 5
- (b) Write down the process and quality parameters in winding and their approximate values for a typical product. 5
4. (a) Name a few common yarn package faults and state the causes and remedies of one such fault. 4
- (b) Discuss the steps to be followed for improving quality of beam in warping through process control. 6
5. (a) What are the main causes of low productivity in warping ? 4
- (b) Calculate the expected efficiency of a warping machine from the following particulars :

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Warping speed = 650 metre/min

Set length = 20,000 metre,

Yarn length on cone = 60,000 metre,

Number of ends per beam = 520,

End breaks / 400 ends / 1000 metre = 1.5,

Time to mend a warp break = 45 second,

Time to change a creel = 1300 seconds,

Time loss due to miscellaneous causes

1000 metre = 15 seconds. 6

6. (a) Why process control programme is adopted in sizing ? 4
- (b) How the size pick-up in yarn of a beam can be determined ? Discuss control of size pick-up in sizing. 6
7. (a) Why control of stretch of warp in sizing is important ? 2

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- (b) With the help of line diagram, show the different zones of stretch in a modern multi-cylinder sizing machine. 6
- (c) How PDN (positive drive nip) influences stretch in wet zone ? 2
8. (a) What conditions/settings of a shuttle loom are to be checked for achieving desired speed of the loom ? 5
- (b) What are operative efficiency and workload efficiency ? Calculate the values of these two parameter if during an hour, the loom operator spends on an average 30 minutes in mending and starting, 15 minutes in ancillary duties like bringing raw materials, cleaning machine, etc. and 15 minutes on rest. 5

9. (a) Write down the factors affecting the loomshed efficiency. 5
- (b) What do you understand by snap study ? How snap study is taken in a loom shed and what are obtained in snap study ? 5