



Name :

Roll No. :

Invigilator's Signature :

CS/B.Tech (APM)/SEM-7/APM-706/2011-12

2011

**DESIGN CONCEPT OF APPAREL MACHINERY
AND EQUIPMENT**

Time Allotted : 3 Hours

Full Marks : 70

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

GROUP – A

(Multiple Choice Type Questions)

1. Choose the correct alternatives for the following : $10 \times 1 = 10$
 - i) Stitching needles are mostly coated with
 - a) Nickel
 - b) Chromium
 - c) Teflon
 - d) Cadmium.
 - ii) Class of stitch 401 has the appearance of
 - a) lock stitch on the top and double chain stitch effect at the bottom
 - b) lock stitch effect on both the sides
 - c) chain stitch effect on both the sides
 - d) double chain stitch effect on both the sides.



- iii) Stitch type 503 is formed with
- a) one needle thread and one looper thread
 - b) two needle threads and two looper threads
 - c) two needle threads and one looper thread
 - d) one needle thread and two looper threads.
- iv) Loopers are used for
- a) Interlacing
 - b) Interlooping
 - c) Intralooping
 - d) None of these.
- v) In differential bottom feed system
- a) lower ply of fabric is stretched
 - b) lower ply of fabric is overfed
 - c) both (a) & (b)
 - d) none of these.
- vi) To minimize abrasion of needle thread during stitching the needle has
- a) short groove
 - b) long groove
 - c) scarf
 - d) shank.
- vii) Application of overlock stitches is
- a) seam neatening
 - b) edge neatening
 - c) to prevent fraying of thread
 - d) all of these.



- viii) Cutting needles are used for
- synthetic fabric
 - heavy type cotton fabric
 - leather sheet
 - light weight fabric.
- ix) Amount of movement of feed dog determines
- SPI
 - Stitch quality
 - Thread tension
 - None of these.
- x) A yarn is passing over a stationary roller and wrapping an angle of 180 degree. If the co-efficient of friction between yarn and roller surface is 0.2 and input tension is 100 gm-wt. The output is
- 120 gm-wt
 - 187.5 gm-wt
 - 190 gm-wt
 - 180 gm-wt.

GROUP – B

(Short Answer Type Questions)

Answer any *three* of the following. $3 \times 5 = 15$

- Differential feed system enhances stitch quality. Explain.
- How are needle number of different systems related ?
- How does needle profile help stitching ?
- What precautions are to be taken during cutting process ?
- If a machine runs at a speed of 3500 rpm and the fabric is stitched at 9 SPI, calculate the length of fabric that can be stitched in metres at 70% efficiency.



GROUP – C

(Long Answer Type Questions)

Answer any *three* of the following. $3 \times 15 = 45$

7. Describe the cutting devices used for fabric cutting with their advantages and disadvantages.
8. What are the principles of button hole making machines to form button hole with advantages and disadvantages ?
9. Composition of materials are very important to get desired property of needle. Explain.
10. Deduce equations for displacement, velocity and acceleration of the slider for a crank and slider mechanism when crank and crank arm lengths are R cm and L cm respectively and crank angular velocity is ω and crank rpm is n .
11. A twin needle chain stitching is carried out with two different upper threads of 2/20S and 2/30S. SPI is 9.0 and machine speed is 4000. Yarn consumption per stitch is 4 mm. If weight of each package is 1.0 kg, calculate No. of package to be required per week per quality if the machines are running 23.5 hrs/day and 6.5 days/week. Take machine efficiency as 85%.

=====