

The Open University of Sri Lanka

Department of Textile and Apparel Technology

Diploma in Industrial Studies (Apparel Production and Management)

Final Examination-2008/2009

TTI3241-Production Planning and Organisation

Duration- 3 Hours



123

Date: 31st March 2009

Time:0930-1230hrs

Total number of questions: 08

Answer **question 1**, which is **compulsory**, and additional **five (05)** questions.

Question 1 carries twenty five (25) marks and question 02 to 08 carry fifteen (15) marks each.

Compulsory Question

- Q1. (a)** Draw a suitable diagram to show the nature of fashion cycle and indicate different phases on it. (3 marks)
- (b)** Give three (03) information that should be provided to the CAD system in computerized marker making. (3 marks)
- (c)** Give three (03) strategies that could be used to increase the marker utilization. (3 marks)
- (d)** During the quality checking of cut parts, it was found that some parts of the pattern pieces have been missed in the cut bundles. Give the possible reason/s for this issue. (4 marks)
- (e)** Data established by work study can be used for several purposes. Give three (03) of them. (3 marks)
- (f)** Give any three (03) important gains that can be obtained by practicing 5S at any workplace. (3 marks)
- (g)** State three (03) reasons for necessity of loading and scheduling in a production organization. (3 marks)
- (h)** What are the advantages of achieving a balanced line in a production flow. (3 marks)

Answer any five (05) questions from the following seven (07) questions

Q2. (a) Name the basic stages of developing a new garment style to the market. Explain briefly the activities involved in each of the mentioned basic stages in developing a style.

- (b)** How do the following factors affect on the marker making process?
- (i) Symmetry and asymmetry of designs
 - (ii) Design characteristics
 - (iii) Grain line of fabrics

Q3. (a) Fabric can be laid using spread on open method, which can be divided into four classes. Name and briefly explain each of them giving suitable diagrams.

- (b)** Explain the possible problems that could be raised due to not properly considering the following factors in spreading and how could you practically minimize/overcome these problems during spreading.
- (i) Shade sorting fabrics
 - (ii) maintaining correct ply tension

Q4. (a) What are the six basic procedures to do a method study?

(b) A production line has ten sequential operations.

Operation	Observed time (min)	Observed rating
1. Pick up the bundle	0.25	90
2. Sort out the parts	0.65	80
3. sew four darts	0.35	100
4. sew two front darts	0.30	105
5. Sew side seam	0.45	90
6. Insert zip	1.50	85
7. Sew waist band	1.85	100
8. Top stitch hem	0.90	105
9. Under press	0.40	90
10. Dispose the bundle	0.80	80

Average bundle size is 10. Machine attention allowance is 7.5% and relaxation allowance is 10%.

- (i) Calculate the standard minute value (SMV).
- (ii) How many garments would be produced by the production line in a day of 450 minutes, under 100% efficiency?

- Q5. (a) Explain three (03) benefits, which can be obtained through the increase of productivity in a garment factory, for **each** of the following parties.
 (i) Employee (ii) Customer (iii) Company
- (b) Explain the relationship between work-in-progress and the through put time in a garment factory.
- (c) Why is it need to maintain an adequate work -in -progress among the workstations in a garment factory?

Q6. Draw up a Gantt chart for planning of following work load received to a garment factory.

Contract	Contract size (number of garments)	SMV per garment	Week due
A	6,000	20	6
B	10,000	15	6
C	4,000	10	6
D	20,000	8	8
E	12,000	25	10
F	10,000	20	10
G	3,000	10	6

The factory has a weekly capacity of 100,000SMV and there are 60 operators organized as two lines in the production floor. Factory works five days per week.

Q7. Following contract order has been received to the ABC Clothing (Pvt) Ltd.

Sizes	S	M	L	XL
Black	200	400	400	200
Yellow	100	100	200	200
Red	100	300	300	200

Sizes	S	M	L	XL
Single garment marker length (m)	1.65	1.75	1.95	2.05

Maximum cutting height = 200 plies (with computerised cutter); End losses=4cm and maximum ply length= 3 garments ; Multi size marker saving: 2% for two sizes, 3% for three sizes and 5% for four sizes.

Prepare a cut order plan to cut the contract order. The material costs are, for black colour:100 Rs/ meter; for yellow colour: 90 Rs/ meter and for red colour :110 Rs/ meter

Calculate the total material cost for the received order.

Q8. A company has planned to finish 500 skirts per day. Factory works 450 minutes in a day. An operational breakdown and SMV value per **bundle** have given in the following table. Bundle contains 10 pieces of skirts.

Operation no.	Operational breakdown	SMV per bundle	Type of machine
1	Overlock necessary parts	16.4	Overlock
2	Sew two back darts	18	Lockstitch
3	Attach welt pocket	30	Lockstitch
4	Join back seam	5	Lockstitch
5	Insert zipper	8	Lockstitch, zipper foot
6	Join both side seam	15	Lockstitch
7	Overlock side seam	6	Overlock
8	Stitch and turn around waist band	7	Lockstitch
9	Overlock hem	11	Overlock
10	Stitch hem	11	Lockstitch

(i) How many operators would be required to balance the line?

(ii) Calculate the balancing loss and give your comments for your answer.