

Ex/PT31E/35/2006

**B. PRINT ENGG. PART I EXAMINATION, 2006**

( 1st Semester )

**COST ESTIMATION**

Time : Three hours

Full Marks : 100

Answer question *No. 7* and any *two* from each group

**GROUP - A**

1. a) Define estimating. What is the difference between estimating and costing ? 2+4  
b) Write the formula of estimated cost and explain each term briefly. Also mention how selling price is determined. 3+8+3
2. a) How many groups of costs are present in estimating ? Describe each type citing suitable examples. 2+4  
b) Some sorts of guidelines are necessary for a printing Estimator. Discuss in details. 10  
c) Which factors should you consider before undertaking printing and finishing job ? 4
3. a) How a job is broken into different parts during estimating? Explain with flow chart. 7  
b) Design an estimate sheet. 8  
c) What do you understand by International series paper ? Mention their specific applications in printing industry.

[ Turn over

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**GROUP - B**

4. a) Mention the corresponding size in cms. of the following :

Foolscap; Quad Crown; Double Medium; Royal 4

- b) Find the GSM of 13.8 Kg/Ream of Double Demy size. 2

- c) Find the Ream weight of 95 gsm Maplitho paper of Quad Crown size. 3

- d) Find the Gross weight of 350 gsm Duplex Board of 76×102 cms. 3

- e) A book consisting of 592 pages of Medium octavo size to be printed 25000 copies. 144 pages are printed in 4 colours, 176 pages in 2 colour and rest in 1 col. Paper to be used 80 gsm Maplitho paper of Double Medium size.

Consider the paper wastage is 2% per colour. The paper price is Rs. 50/- per Kg and Freight charges is 25 paise per Kg.

Find out the total quantity of paper in ream required for printing of the job and also the total money to be involved in purchasing the paper. 8

5. a) Write the SPANKS ink coverage formula and explain each term with index value of every factor. 2+6

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b) Find the quantity of ink to be consumed for printing the following jobs.

i) 15000 copies of a poster on chromo Art paper in 4 colours in offset process on crown size having coverage 30% in Black, 25% in Cyan, 35% in Magenta and rest in Yellow. Printing on one side only. Take wastage 3% per colour. 6

ii) 5 lakhs of a Magazine in light type of medium quarto size of Indegeneous Art paper having 80 pages with Black ink to be printed in Gravure process. Paper to be used in Double Medium size. Take wastage 5%. 6

6. Estimate the cost of the Annual Report to be printed in offset process according to the specification and data given below:

No. of copies : 80,000

Size of the Report after finishing : 18×24 cms.

Type area of each page : 14×18 cms.

No. of pages : 64

48 pages – printed in 1 col. line text and sketches.

16 pages – printed in 2 col. line and halftone.

Paper used : 60 gsm Indegeneous Art paper and

Double Crown size.

Paper Price : Rs. 52,000/- per ton.

Typesetting charges : Rs. 0.25/sq. cm.

[ Turn over

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Film processing cost : Rs. 1/sq. cm. for 1 col. line pages

Rs. 2.50/sq. cm. for 2 col. lien and halftone pages.

Imposition cost/forme of 8 pages : Rs. 100 for 1 colour forme.

Rs. 150 for 2 colour forme.

Plate processing cost : Rs. 200/forme of 8 pages for 1 colour

Rs. 250/colour/forme of 8 pages for 2 colour

Impression cost :

Rs. 100/thousand/colour/forme for 1 colour forme

Rs. 150/thousand/colour/forme for 2 colour forme

Paper wastage : 1.5% per colour per forme. 20

7. Find the composite Machine **Hour** Rate (CMHR) of PO-25 machine (works in two shifts) **from** the information given below :

**PO-25 Machine**

Value	Rs. 9,00,000	
Manpower (in one shift)	No.	Rs.
Printer	1	4000 p.m.
Feeder Man	1	2750 p.m.
Ink Man	1	2500 p.m.
Supervisor	1	5000 p.m.

Power rating – 12 KW

Power charge/unit – Rs. 5

Working hours/shift – 8 hours

No. of working days per year – 300 days

capacity utilisation – 80%

Average output per shift – 30,000 impressions

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Cost of exclusive direct consumables – Rs. 25,000/-

Other benefits to working staff :

Bonus	–	20%
P. F. Contribution	–	5%
E. S. I.	–	9%
Gratuity	–	4%

Other charges :

Bank interest on Machine value	–	16%
Depreciation (on one shift basis)	–	15%
Insurance	–	1 %

Other fixed annual expenditure of the printing

Press : Rs. 1,25,000/-