

# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Communication Skill ( English)

Code: K101

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Do as directed. (Any 10)

10

- a. Moody (Write synonym of the given word)
- b. Boundless (Write antonym of the given word)
- c. Demo (add Prefix).
- d. Tax (add Suffix).
- e. Call \_\_\_\_\_ team here (use Articles).
- f. I took a new name every month.( Add question tag)
- g. The teachers said “ the earth revolves round the sun” (Change into indirect speech).
- h. Though everyone else was very happy. I was not. ( Make it compound)
- i. The hermit was frail and weak. ( Make it exclamatory).
- j. I had not done anything in my my line of work. (Make it Affirmative)
- k. He is too ill to go to school (Make it negative).
- l. He said oh help me be quick or I will be lost. (Punctuate the sentence).
- m. He is so dull that he can't understand this problem.(Remove so- that)
- n. If you do not work hard, you will not get success. (Use Unless).

### Q2 Answer the following questions. (Any 3)

12

- a. Explain the importance of having a clear aim in life.
- b. Describe the role of great book and teacher play in life.
- c. Write your opinion in peace of mind.
- d. Explain the requirement for true happiness.

### Q3 Answer the following questions. (Any 3)

12

- a. State the importance of cultural differences in context with gesture.
- b. Write technical description of an offset printing machine.
- c. Write a technical description of folding machine.
- d. Write a paragraph about screen printing and its application.

### Q4 Answer the following questions. (Any 3)

12

- a. Make two sentences using the given homophones (I) Flour, Flower (II) Leek, Leak
- b. Make a sentence using following collocations (I) Have a birthday (II) Go bankrupt (III) Do well (IV) make a mistake.
- c. Write the meaning of the following idioms and make a sentence of your own (I) Piece of cake (II) Break the ice
- d. Change the voice
  - i) She had read a book of mine.
  - ii) His work has included numerous scientific papers.
  - iii) Chairs were being arranged.
  - iv) They full filled his every need.

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**Q5 Answer the following questions. (Any 2)**

**12**

- a. Write a dialogue between a students and teachers about the importance of printing.
- b. Write a dialogue between two friends discussing career opportunities in printing industry.
- c. Write a report on an industrial visit to a printing press.
- d. Write a motivational speech for your classmates on "Skill Development"

**Q6a. Read the following passage and answer the following questions.**

**08**

Technology has become an inseparable part of human life. From the moment we wake upto the time we sleep, we are surrounded by gadgets. Mobile phones, Computers and the internet have made communication faster and easier. Education has also been transformed as students now have access to online classes, e- books, and virtual libraries.

However excessive use of technology can be harmful. It reduces face to face interaction, affects health and sometimes make people overdependent. Therefore technology should be used wisely so that it becomes a tool for progress and not a cause of problems.

Questions

1. How has technology affected communication?
2. Mention two benefits of technology in education.
3. Why should technology be used wisely?
4. What are the negative effects of using technology too much?

**b. Attempt any two of the following**

**04**

1. Write any four examples of negative and positive postures.
2. Mention any four examples of body language.
3. See a man ( run) after the bus. He (want) to get in. [ use appropriate form of the verbs given in the bracket]  
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Printing Processes

Code: K104

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. State 2 examples each of print media & non print media.
- b. State 2 primary colors of additive color theory.
- c. State the purpose of I) image setter II) CTP machine.
- d. List 2 consumables used in offset plate making process.
- e. Write names of 2 offset machine manufacturing companies.
- f. State 2 digital camera manufacturing companies.
- g. State 2 paper manufacturing companies.

### Q2 Answer the following questions. (Any 3)

12

- a. Define graphic original and state its types.
- b. Describe the stages involved in image carrier manufacturing for flexography printing process.
- c. Compare offset printing with screen printing (4 Points)
- d. Explain the process of perfect binding.
- e. State 4 characteristics of digital printing.

### Q3 Answer the following questions. (Any 3)

12

- a. With a neat diagram explain the process of additive color theory.
- b. Explain any 2 operations in prepress.
- c. Classify image carriers based on photo sensitivity and explain its application.
- d. State and explain the function of different parts of a basic unit of flexographic printing process.
- e. Define the terms - GSM and Caliper with examples.

### Q4 Answer the following questions. (Any 3)

12

- a. Explain imposition and the process of work and tumble.
- b. Explain the characteristics of principle of offset printing process.
- c. With neat diagram explain the process of screen printing.
- d. State any 4 ingredients used in printing inks.

### Q5 Answer the following questions. (Any 3)

12

- a. Write names of 4 digital printing machine manufacturing companies.
- b. State 4 characteristics of gravure printing process.
- c. State working principle of flexography.
- d. Differentiate between offset and gravure printing processes (4 points)

### Q6 Answer the following questions. (Any 3)

12

- a. Write a short note on different methods of impressions used in printing industry.
  - b. Explain in detail the process of computer to plate.
  - c. Describe the process of screen making.
  - d. With a diagram explain the principles of letterpress printing process. Write 2 characteristics each of letterpress and screen printing.
  - e. Write 2 ISO paper sizes. Also state 4 reams = \_\_\_\_\_ sheets & 2 quires= \_\_\_\_\_ sheets.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Printer's Mathematics.

Code: K106

Duration: 03.00 Hours

Marks:70

## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. Differentiate up to 2 points - ratio and proportion.
- b. Give one example each of direct and indirect proportion.
- c. Write formula to calculate simple and compound interest.
- d. Calculate the simple interest earned if Rs 10,000 invested at 5% annual interest rate for 5 years.
- e. Write formula to calculate area and volume of sphere.
- f. Write formula to calculate total surface area of cone.
- g. List 2 types each of measures of central tendency and charts.

### Q2 Answer the following questions. (Any 3)

12

- a. 5 men and 10 women complete particular work in 5 days in how day the same will be finished by 7 men and 5 women.
- b. Describe Simpson's one third rule in brief.
- c. Define depreciation and state 2 causes behind it.
- d. Find mean and median for a dataset - 1,2,3,4,5,6,7,8,9,10
- e. Find the standard deviation for following ungrouped data.

|           |    |    |    |    |    |    |    |
|-----------|----|----|----|----|----|----|----|
| Age       | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| Frequency | 1  | 2  | 5  | 7  | 8  | 6  | 2  |

### Q3 Answer the following questions. (Any 3)

12

- a. A person travels from one place to other at 30km/hr and returns at 90 km/hr. If the total time taken is 5 hours, then find the distance.
- b. Find the compound interest on Rs 12,600 for 3 years at 10% per annum.
- c. Narendra bought an Ac for Rs.12,160 and paid Rs.340 for transportation. Then he sold it for Rs. 12,875. Find his profit percentage.
- d. If a shopkeeper bought 1 kg of grapes for Rs.100 and sold it for Rs.125/kg. How much is the profit earned by her?
- e. Calculate the range and the coefficient of range with following data.

|                |      |       |       |       |       |
|----------------|------|-------|-------|-------|-------|
| Marks          | 0-10 | 10-20 | 20-30 | 30-40 | 40-50 |
| No.of students | 02   | 05    | 07    | 08    | 04    |

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**Q4 Answer the following questions. (Any 3)****12**

- If simple interest on certain investment at 9 % per year in 5 years is Rs 4500. find the amount invested.
- Find the surface area, volume, edge and vertices for a cube of 8 cm size.
- In a certain class of 12<sup>th</sup> standard the favourite sports of students are tabulated below. Prepare pie chart.

|          |        |         |            |        |
|----------|--------|---------|------------|--------|
| Football | Hockey | Cricket | Basketball | Tennis |
| 10       | 5      | 6       | 10         | 10     |

- An ice-cream shop surveyed the consumer flavour choice using online poll. Draw a bar chart for the poll result tabled below.

| Flavours of icecream | Frequency |
|----------------------|-----------|
| Vanila               | 16        |
| Strawbery            | 5         |
| Choclate             | 12        |
| Mini choclate        | 3         |
| Butter scoth         | 6         |

**Q5 Answer the following questions. (Any 3)****12**

- Differentiate between direct and indirect proportion.
- Find volume and total surface area of a cylinder with 30 cm diameter and 75 cm height.
- If a printing machine cost Rs 1,00,000 and useful life of 15 years. Calculate the depreciation rate using straight line method.
- List along with one use, any four types of charts.

**Q6 Answer the following questions. (Any 3)****12**

- At what rate of compound interest per year, a sum of Rs. 1200 will become Rs 1,452.
- Convert following fraction into percentage.  $\frac{2}{5}, \frac{3}{5}, \frac{1}{6}, \frac{3}{4}$ .
- Convert following percentages into fraction. 70%, 65%,45%,80%.
- Draw a line chart using following table.

| Months          | Jan | Feb | Mar | Apr | May | June |
|-----------------|-----|-----|-----|-----|-----|------|
| Turnover (lakh) | 50  | 85  | 60  | 75  | 35  | 80   |

- State the steps of plotting a pie-chart.

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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Basic Science

Code: K201

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary.

### Q1 Answer the following questions. (Any 5)

10

- a. Define 'error'. give one example.
- b. State four systems of unit.
- c. Define 'force'. write SI unit of force.
- d. Write the long form of LASER.
- e. Define acid . Write one example of acid.
- f. Define ionization. Write one example.
- g. Define electrode. Write one example of electrode.

### Q2 Answer the following questions. (Any 3)

12

- a. Differentiate between accuracy and precision. (four points)
- b. State and explain Newton's second law of motion.( $F=ma$ ).
- c. State four properties of LASER.
- d. Distinguish between strong acid & weak acid. (Four points).
- e. State any four postulates of Arrhenius theory of electrolytic dissociation.

### Q3 Answer the following questions. (Any 3)

12

- a. Differentiate between fundamental quantities and derived quantities.
- b. Define I) speed II) Power.
- c. State and explain Snell's law of refraction with suitable diagram.
- d. Differentiate between adhesive force and cohesive force. (two points).
- e. Explain electrolysis of  $\text{CuSO}_4$  (aq.) solution by using platinum electrode with labelled diagram and schematic representation.

### Q4 Answer the following questions. (Any 3)

12

- a. State four formulas to estimate the errors in the measurement process.
- b. Define 'energy'. State laws of conversion of energy.
- c. State any four applications of LASER in printing industry.
- d. Define Viscosity. Define Newton's law of viscosity.
- e. State any explain Faraday's first law of electrolysis with suitable diagram.

### Q5 Answer the following questions. (Any 3)

12

- a. Write the need of units of measurement.
- b. Define I) acceleration II) retardation.
- c. Define I) Lewis acid II) Lewis base.
- d. Describe the electroplating of silver metal on iron spoon with suitable, labelled diagram and schematic representation.

### Q6 Answer the following questions. (Any 3)

12

- a. State any four requirements of standard unit.
  - b. State and explain polarization of light with suitable labelled diagram.
  - c. Define capillarity. Explain it with suitable examples and diagram.
  - d. When the same amount of current is passed through the solution of  $\text{CuSO}_4$  and  $\text{ZnSO}_4$ , then 0.7gm and 7.16 gm of Cu and Zn get deposited on respective electrodes. Calculate equivalent weight of Zn. ( given equivalent of Cu=31.75)
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Prepress Essential

Code: K202

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. What is meant by optical density.
- b. State 2 ISO standards for light source along with their color temperature.
- c. Write full form of CCD & CMOS.
- d. Write full form of PDF and state which PDF format is used in printing industry.
- e. State names of 2 color models.
- f. What is meant by LPI and DPI .
- g. Write names of 2 substrates used for printing.

### Q2 Answer the following questions. (Any 3)

12

- a. Describe any two color viewing requirements.
- b. State 2 characteristics each of AM and FM.
- c. Describe the meaning of proportionality failure and additivity failure.
- d. State 4 characteristics of CIP 4.
- e. Write formula to calculate Delta E and ink trapping.

### Q3 Answer the following questions. (Any 3)

12

- a. Describe function of cones and rod present in human vision.
- b. State 4 specifications of flatbed scanner.
- c. State 3 characteristics each of raster and bitmap.
- d. Explain Pantone color specification system.
- e. Describe construction and working of densitometer.

### Q4 Answer the following questions. (Any 3)

12

- a. State 2 characteristics each of light & color.
- b. Describe working principle of flatbed scanner.
- c. Draw ideal and actual reflection of any two process inks.
- d. State the meaning and one example each of device dependent and device independent colors.
- e. Define color gamut & explain.

### Q5 Answer the following questions. (Any 3)

12

- a. Describe additive color theory.
- b. Describe any 2 dot shapes.
- c. Explain function of RIP.
- d. Describe working of colorimeter.

### Q6 Answer the following questions. (Any 3)

12

- a. Describe 2 factors on which graphic original are classified.
  - b. Describe moire defect, state its 2 causes
  - c. State 4 checks performed in preflight.
  - d. State screen angles for process CMYK color for planographic offset process.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Screen Printing Process

Code: K203

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. State 2 applications of screen printing process.
- b. Write names of two materials used to make mesh for screen.
- c. State the measuring unit of screen angle and screen ruling.
- d. Describe how spot colors are different than process colors.
- e. State two machine configurations of screen printing machine.
- f. Write names of two companies that manufacture screen printing machines.
- g. State two examples of point of purchase graphics.

### Q2 Answer the following questions. (Any 3)

12

- a. Describe how screen printing process has developed over the years.
- b. Write four technical specification of frame.
- c. State screen angles used for process CMYK colors in screen printing.
- d. Describe the meaning of off contact (snap).
- e. Describe how screen printing is used for textile printing.

### Q3 Answer the following questions. (Any 3)

12

- a. Describe working principle of screen printing process.
- b. Explain the meaning of mesh count with two examples.
- c. Describe computer to screen process.
- d. Compare manual and machine screen printing. (2 point each).
- e. State four examples of decal / label printed by screen printing.

### Q4 Answer the following questions. (Any 3)

12

- a. Write names of four equipment tools used in screen printing.
- b. Write names of two materials and one property each, used for frame.
- c. List steps in screen preparation, in sequence.
- d. Describe how registration is archived in manual screen printing.
- e. State four applications of screen printing in packaging.

### Q5 Answer the following questions. (Any 3)

12

- a. Compare screen printing with offset printing ( 4 point).
- b. Describe two specifications of squeegee.
- c. List four press parameters of screen printing.
- d. Describe two characteristics of ink used in screen printing.

### Q6 Answer the following questions. (Any 3)

12

- a. List four factors governing selection of mesh and squeegee.
  - b. Describe any one screen making technique.
  - c. State two problems, their causes and remedy related to screen printing.
  - d. Describe the use of screen printing in printed electronics.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Print Material Science

Code: K301

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. Write two finishing treatments for paper.
- b. Define 'Grammage of paper'.
- c. List 2 natural fibers.
- d. State two sustainability methods for polymer substrate.
- e. Write significance of pH of paper.
- f. Define viscosity in the context of printing inks.
- g. Define the term 'dot gain' in printing.

### Q2 Answer the following questions. (Any 3)

12

- a. Describe the manufacturing process of paper with highlighting stages.
- b. Explain any two physical properties of paper that affect the performance in printing.
- c. Compare the properties of natural and synthetic fibers used in textiles printing, upto 4 points.
- d. Describe the working of the extrusion process in manufacturing polymer substrate.
- e. Define the terms (i) rheology (ii) opacity.

### Q3 Answer the following questions. (Any 3)

12

- a. Write the purpose of calendering and coating treatments of paper.
- b. Explain any two optical properties of paper with examples.
- c. State the advantages and disadvantages of using blends in textile printing. (any 2)
- d. Explain any two properties of polymeric substrates that affect their applications.
- e. Write functions of (i) pigments (ii) vehicle used ink.

### Q4 Answer the following questions. (Any 3)

12

- a. Explain any one method of pulping used in paper manufacturing.
- b. What is Cobb value? How does it determine the quality of paper?
- c. Explain the properties of rayon and polyester materials in textiles printing.
- d. Explain the development in bio-degradable substrates for sustainability in polymer use.
- e. Describe the manufacturing process of liquid ink. With suitable flow-sheet.

### Q5 Answer the following questions. (Any 3)

12

- a. Elaborate board manufacturing process.
- b. Describe folding endurance. Write its importance.
- c. Elaborate any one method of surface treatment given to plastic film.
- d. State the formulation used in offset printing inks.

### Q6 Answer the following questions. (Any 3)

12

- a. Differentiate between coated paper and uncoated paper upto 4 points.
  - b. Elaborate any one treatment given to textile.
  - c. State any four applications of polymeric substrates.
  - d. Elaborate ink drying by absorption & oxidation-polymerization method.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./ Dec. 2025

Course: Offset Printing Process

Code: K302

Duration: 03.00 Hours

Marks: 70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. Draw schematic diagram to show I) portrait II) landscape page orientation.
- b. State two characteristics of offset plate.
- c. State the function of front lay.
- d. Write the unit in which ink film thickness is measured.
- e. Mention the wavelength of UV- Led light source for dryers.
- f. Write names of two configurations of webfed machines.
- g. State two applications of ML in offset printing process.

### Q2 Answer the following questions. (Any 3)

12

- a. Describe any one type of halfsheet imposition scheme.
- b. Compare offset printing process with screen printing process upto four points.
- c. Name four parts of feeding unit. Also state their function.
- d. Write two characteristics each of two types of reel stand.
- e. State one cause and one remedy each for I) Misregistraion II) Scum.

### Q3 Answer the following questions. (Any 3)

12

- a. Describe workflow of CTP plate making.
- b. Draw schematic diagram of single color offset printing machine.
- c. Describe working of side lay. Also describe two types of side lay.
- d. Explain the function of dancer roller with diagram.
- e. Compare sheetfed and webfed printing upto four points.

### Q4 Answer the following questions. (Any 3)

12

- a. State four characteristics of waterless offset process.
- b. Explain the principle of planographic offset process.
- c. Draw schematic diagram of conventional dampning system and describe its function.
- d. Write names of 4 companies that manufacture offset machines.
- e. Draw schematic diagram of two colour stack type offset printing web machine.

### Q5 Answer the following questions. (Any 3)

12

- a. State four advantages of CTP plates / technique.
- b. Describe construction & working of metal printing machine.
- c. Explain - pH & conductivity related to the dampning solution.
- d. Describe the meaning of fanout. How it is controlled?

### Q6 Answer the following questions. (Any 3)

12

- a. Write 2 charactristics each I) central sewing II) side sewing.
  - b. State 4 sustainability practices related to the offset printing.
  - c. Define I) Undercut II) cylinder gap. Draw schematic diagram.
  - d. Describe the working of former folder.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Printed Electronics

Code: K303

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. Define the term Printed Electronics.
- b. Write 2 applications of Printed Electronics.
- c. State 2 advantages of printed electronic products.
- d. Write names of 2 substrates used in Printed Electronics.
- e. Write names of 2 printing processes to produce the Printed Electronics products in roll form.
- f. Write names of 2 organic materials used in Printed Electronics
- g. State 2 advancements related to the Printed Electronics

### Q2 Answer the following questions. (Any 3)

12

- a. State 4 required characteristics of printing process related to the Printed Electronics
- b. Write names of 4 companies involved in the production of Printed Electronics
- c. Write names of 4 Printed Electronics products.
- d. State 2 advantages and 2 limitations of ink jet related to Printed Electronics
- e. Describe transfer printing process for Printed Electronics

### Q3 Answer the following questions. (Any 3)

12

- a. Compare Printed Electronics with conventional electronics up to 4 points.
- b. State 4 challenges related to the printing process for Printed Electronics.
- c. State 4 required properties of substrates used in Printed Electronics
- d. Write 4 characteristic of flexographic printing process related to Printed Electronics
- e. Describe aerosol printing process for Printed Electronics.

### Q4 Answer the following questions. (Any 3)

12

- a. State 4 requirements of ideal printing process used for Printed Electronics
- b. Describe any 2 material challenges related to the Printed Electronics
- c. Describe 2 storage condition related to the Printed Electronics
- d. Write 4 printing consideration related to screen printing for Printed Electronics
- e. Describe direct write (DWI) printing process for Printed Electronics

### Q5 Answer the following questions. (Any 3)

12

- a. Describe need and potential of Printed Electronics
- b. Describe any 2 printing considerations for Printed Electronics
- c. Explain sustainability related to the Printed Electronics
- d. Write 4 gravure printing considerations for Printed Electronics

### Q6 Answer the following questions. (Any 3)

12

- a. Write major stages in printing of Printed Electronics products , by any process.
  - b. Describe any 2 QC tests related to the Printed Electronics
  - c. Explain any one configuration of flexo press with neat diagram.
  - d. Write names of 2 conductors & 2 insulator materials.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Flexographic Printing Process

Code: K304

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. State required printing pressure and ink film thickness in flexography.
- b. Write 2 advantages of using hybrid printing press.
- c. List 4 finishing operations carried out on flexo printed products.
- d. State 4 flexographic ink manufacturing companies.
- e. State 4 flexographic plate manufacturing companies.
- f. List 4 end use requirements of flexo printed products.
- g. Write 2 reasons behind following sustainability guidelines.

### Q2 Answer the following questions. (Any 3)

12

- a. Write 4 advantages of flexography.
- b. State spectrum range of UV-A, UV-B, UV-C and D50 light.
- c. Draw schematic diagram of inline & stack flexo press.
- d. Write 4 mechanical properties of doctor blade.

### Q3 Answer the following questions. (Any 3)

12

- a. Write 2 features and 2 function of doctor blade.
- b. Draw schematic diagram of processed plate and explain its parts.
- c. Draw diagram of CIC press state its 4 features.
- d. Show different components of unwinder unit using schematic diagram and state their function.

### Q4 Answer the following questions. (Any 3)

12

- a. Write 2 features & 2 applications of image carrier and anilox roller.
- b. Draw diagram of unprocessed plate and write function of each layer.
- c. Describe webfed lamination process using diagram.
- d. Describe working principle and application of in-mold labels.
- e. Write characteristics, reason, remedy for 2 plate mounting troubles.

### Q5 Answer the following questions. (Any 3)

12

- a. What is laser ablation CTP making? Write stages involved in it.
- b. Describe hybrid flexography printing with example.
- c. State 4 factors governing selection of anilox roll.
- d. Write characteristics, reason, remedy for 2 ink related flexo- printing problems.
- e. Tabulate ink ingredients and their percentages in flexo graphic solvent based ink.

### Q6 Answer the following questions. (Any 3)

12

- a. Write stages involved in sheet photopolymer flexo plate making.
  - b. Write 2 advantages each of common impression and inline flexo press.
  - c. State along with one application any 4 engraving geometries used in anilox roller engraving.
  - d. List one function each of any 4 ingredients of flexo ink.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Gravure Printing Process

Code: K402

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. List metals used for preparing gravure cylinder.
- b. List applications of gravure printing.
- c. Explain drawbacks of chemical etching.
- d. Elaborate function of doctor blade.
- e. List surface treatments used in gravure printing.
- f. Elaborate types of gravure ink.
- g. Elaborate purpose of stroboscope in gravure printing.

### Q2 Answer the following questions. (Any 3)

12

- a. Compare gravure image carrier with flexography image carrier.
- b. Elaborate working principle of chemical etching.
- c. Explain with properties material used for preparing doctor blade.
- d. Explain function of ingredients of gravure ink.
- e. Elaborate working principle and advantages of ELS.

### Q3 Answer the following questions. (Any 3)

12

- a. Elaborate variables of electroplating.
- b. Explain working principle of electronic engraving.
- c. Explain types and properties of impression roller covering used in gravure printing.
- d. Elaborate any two ink drying mechanism used in gravure printing machine.
- e. Explain auto register system used in gravure printing machine.

### Q4 Answer the following questions. (Any 3)

12

- a. Elaborate procedure of reclaiming electroplated layer.
- b. Elaborate working principle of laser engraving gravure cylinder.
- c. Explain types of rollers on printing machines and their powering method.
- d. Elaborate end use requirement of printed products using gravure printing.
- e. Elaborate sustainability in gravure printing process.

### Q5 Answer the following questions. (Any 3)

12

- a. Elaborate quality features of gravure cylinder.
- b. Explain proofing method used in gravure cylinder making.
- c. Elaborate working principle and applications of ESA.
- d. Explain test carried out on gravure ink.

### Q6 Answer the following questions. (Any 3)

12

- a. Explain methods of artwork preparation for gravure printing.
  - b. Elaborate drawbacks of electronic engraving.
  - c. Explain any two problems and their solution in gravure printing.
  - d. Describe materials for post printing operations in gravure printing.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Supply Chain Management in Printing.

Code: K404

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. Define 'Inventory'. state one example.
- b. Define 'Logistic'. state one example.
- c. State 2 examples of 'work in progress' inventory in printing press.
- d. Write full FIFO, LIFO.
- e. Define 'Distribution Channel'.
- f. State 2 examples of distribution channel.
- g. Write the meaning of automated warehouse.

### Q2 Answer the following questions. (Any 3)

12

- a. Describe - I) Procurement II) Distribution.
- b. Write names of 8 raw materials used in printing.
- c. Explain Inventory tracking with example.
- d. Describe importance of shipping & delivery.
- e. Describe 2 examples of real time data-sharing & their purpose.

### Q3 Answer the following questions. (Any 3)

12

- a. Describe two stages in raw material procurement.
- b. State 4 points related to the supplier relationship.
- c. Elaborate Just in Time Inventory, also list 2 examples.
- d. Describe supply chain cycle.
- e. State 4 points related to six sigma technique.

### Q4 Answer the following questions. (Any 3)

12

- a. State 4 functions of planning department.
- b. What is carbon footprint? List carbon footprint of 2 printing process.
- c. List 2 advantages & 2 limitation of road transport.
- d. Elaborate 'ESC' & its significance.
- e. Elaborate 'perfect order fulfillment & inventory turnover'.

### Q5 Answer the following questions. (Any 3)

12

- a. Describe two troubles & their solutions related to supply chain management.
- b. State 4 practices adopted by printing industry related to sustainability.
- c. State meaning of EOQ. How it is calculated.
- d. State 2 characteristics each of direct and indirect distribution channel.

### Q6 Answer the following questions. (Any 3)

12

- a. Describe the stages of logistics planning.
  - b. Write full form of I) EPR II) PCW III) PCF IV) PCR related to best practices in supply chain management.
  - c. Describe any two freight forwarding methods.
  - d. List 4 advantages of using robotics & drone in warehouse.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Environmental Education & Sustainability

Code: K406

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. State any two natural resources.
- b. Define renewable sources.
- c. Define ecosystem.
- d. State any 2 types of pollution.
- e. State any 2 causes of water pollution.
- f. Define green technology.
- g. State any two laws for the environmental protection.

### Q2 Answer the following questions. (Any 3)

12

- a. Define environment. State types of environment.
- b. Explain the impact of over exploitation of natural resources on the environment.
- c. State general characteristics of ecosystem.
- d. State any 4 preventive measures for soil conservation.
- e. Explain the role of NGOs in the environmental protection.

### Q3 Answer the following questions. (Any 3)

12

- a. Explain the concept of 5R with respect to the modern waste management.
- b. Differentiate between renewable and non renewable energy sources (4 point).
- c. Explain the need of conservation of biodiversity.
- d. State the government norms to control the noise pollution. (any4).
- e. Explain the role of information technology in environment protection.

### Q4 Answer the following questions. (Any 3)

12

- a. State the factors contributing to climate change (any 4).
- b. Explain the importance of natural resource to the humans.
- c. Explain the importance of ecosystem.
- d. State the standard quality measures for domestic potable water.
- e. Explain the plant-based packaging technology.

### Q5 Answer the following questions. (Any 3)

12

- a. Explain the need of environmental education.
- b. Explain the new energy sources as a green solution to environmental issues.
- c. State CPCB norms of ambient air quality in residential area. (any two).
- d. Explain the importance of public participation in environment protection.

### Q6 Answer the following questions. (Any 3)

12

- a. Explain the concept 'Zero-carbon footprint'
  - b. State the need of optimum used of natural resources to maintain the sustainability.
  - c. Explain the importance of biodiversity.
  - d. Explain the role of pollution control boards of Maharashtra State Government.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Quality Control In Printing

Code: K501

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. Define quality and quality cost.
- b. State 2 objectives of fish bone diagram.
- c. List any 4 standards used in printing industry.
- d. State measures of central tendency.
- e. Write principles of 5S.
- f. Differentiate probability sampling from non-probability sampling.
- g. Write 2 reasons behind sampling.

### Q2 Answer the following questions. (Any 3)

12

- a. Describe appraisal cost of quality with example.
- b. Write formula to calculate print contrast and trapping.
- c. State 4 recommendations of ISO14000.
- d. Find mean, mode and median of data set below.  
13,14,11,12,11,15,11,16,10,17
- e. Classify control charts used in SPC.

### Q3 Answer the following questions. (Any 3)

12

- a. Describe 4 aspects of quality assurance.
- b. State 2 features and 2 applications of test forme.
- c. Write 4 specifications of GRACOL system.
- d. Describe the concept - Six sigma.
- e. Define SPC and write its 3 applications.

### Q4 Answer the following questions. (Any 3).

12

- a. Describe 4 aspects of quality control.
- b. State 2 features and 2 applications of histogram.
- c. Write 4 specifications of SWOP system.
- d. Calculate standard deviation and variance of following sample dataset - 21,23,19,22,24,20

### Q5 Answer the following questions. (Any 3)

12

- a. Describe the inspection cost of quality.
- b. Find color difference between two printed patches-  
 $A = (L = 98, a = 17, b = -2)$  and  $B = (L = 91, a = 13, b = 5)$ .
- c. Write 4 specifications of G7.
- d. Describe the concept - process capability.

p.t.o

**Q6 Answer the following questions. (Any 3)**

- a. Write 4 responsibilities of quality control officer.
- b. Describe proofing related recommendations of ISO 12647.
- c. State 4 features of TQM and lean management.
- d i) 10 samples each of size 30 of offset machine blowers were tested for pressure. The result of the inspection are given below. Draw a 'P' chart

|                 |   |   |   |   |   |   |   |   |   |    |
|-----------------|---|---|---|---|---|---|---|---|---|----|
| Sample no       | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
| No of defective | 3 | 4 | 1 | 0 | 2 | 2 | 2 | 1 | 2 | 3  |

**OR**

- ii) Plot the X bar and R control charts for the cyan ink density values measured for 5 samples each of size 5 . the values are tabulated below.  $A_2 = 0.577, D_3 = 0, D_4 = 2.114$

| Sample No. | Measured Cyan Density |      |      |      |      |
|------------|-----------------------|------|------|------|------|
|            | 1                     | 2    | 3    | 4    | 5    |
| A          | 1.30                  | 1.40 | 1.35 | 1.45 | 1.50 |
| B          | 1.20                  | 1.30 | 1.50 | 1.35 | 1.25 |
| C          | 1.55                  | 1.50 | 1.60 | 1.25 | 1.30 |
| D          | 1.28                  | 1.38 | 1.48 | 1.40 | 1.35 |
| E          | 1.41                  | 1.36 | 1.45 | 1.39 | 1.47 |

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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./ Dec. 2025

Course: Flexible Packaging Process

Code: K502

Duration: 03.00 Hours

Marks: 70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. List 2 applications of blown film.
- b. List 2 application of blister packaging.
- c. Draw a diagram of bag in box.
- d. List 2 materials used to manufacture lamitube.
- e. Define sterilization.
- f. List 2 packages used for carbonated soft drinks.
- g. List 2 applications of sustainable packaging.

### Q2 Answer the following questions. (Any 3)

12

- a. Differentiate between Thermoplastics and Thermosets ( Upto 4 points).
- b. With a diagram explain the process of blown film extrusion.
- c. How is stretch wrapping film different from shrink wrapping film? Support your answer with example and application.
- d. Elaborate on packaging of meat.
- e. Write short note on sustainable packaging methods. (with example)

### Q3 Answer the following questions. (Any 3)

12

- a. Differentiate between flexible and rigid packaging. (upto 4 points).
- b. With diagram, explain the process of wet lamination.
- c. Explain in details the purpose of various layers used in tetrapack.
- d. Describe 2 types laminated tubes.
- e. With appropriate applications, explain CAP process.

### Q4 Answer the following questions. (Any 3)

12

- a. List 4 properties of polyethylene with its application.
- b. With neat diagram explain closure, its functions & types.
- c. Describe aseptic packaging.
- d. State the packaging requirements for bakery products.
- e. Write note on edible packaging with 2 advantages.

### Q5 Answer the following questions. (Any 3)

12

- a. Explain the role of plasticizes and colorants in plastic manufacturing.
- b. Explain the blister pack process with 2 advantages.
- c. With appropriate diagram explain the structure of Retort Pack.
- d. Explain physical and chemical properties of aluminium foil as a food packaging material.

### Q6 Answer the following questions. (Any 3)

12

- a. Write 2 applications of PVC and PP each in packaging.
  - b. Write a note on sealing method in flexible packaging.
  - c. Describe the process of vertical form fill seal machine.
  - d. State the flexible packaging material used for the following -
    - i. Oil
    - ii. Lays
    - iii. Ketchup standup pouch
    - iv. Tea pouches
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Management  
Duration: 03.00 Hours

Code: K503  
Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1 Answer the following questions. (Any 5)

10

- a. Write definition of management given by E.W.Taylor.
- b. List 4 basic functions of management.
- c. Write full form of I) TPM II) ERP.
- d. Define quality standards.
- e. List the 4 sources from where you can get new product ideas.
- f. Define marketing management.
- g. List 4 benefits of information technology in marketing.

### Q2 Answer the following questions. (Any 3)

12

- a. Elaborate 'controlling' concept in marketing.
- b. Explain growth stage related to product life cycle.
- c. Describe any 2 brain storming techniques.
- d. Elaborate Kanban card system.
- e. Explain traditional marketing list its 2 limitations.

### Q3 Answer the following questions. (Any 3)

12

- a. Write differences on 4 aspects between Fayol and Taylor theories of management.
- b. In product life cycle explain the stage of decline.
- c. List 4 benefits of Kanban card system.
- d. Explain digital marketing. List its 2 examples.
- e. List 4 functions of Human Resources Management.

### Q4 Answer the following questions. (Any 3)

12

- a. Explain any 2 principles of scientific management.
- b. Describe strategic steps for sustainable design of product.
- c. Write full form of OSHA. Elaborate it.
- d. Explain any 4P's of marketing.
- e. Describe planning & production stage related to supply chain management.

### Q5 Answer the following questions. (Any 3)

12

- a. Elaborate 'Product management'.
- b. Explain any two steps of lean manufacturing.
- c. List 4 benefits of customer relationship management.
- d. List 4 objectives of supply chain management

### Q6 Answer the following questions. (Any 3)

12

- a. Based on Taylor theory explain following techniques of scientific management.  
i) work study      ii) method study.
  - b. Elaborate 'operation mangment'.
  - c. Explain the concept of brand related to marketing.
  - d. Elaborate i) Logistics ii) Storage related to supply chain management.
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# Government Institute of Printing Technology, Mumbai

Odd term end theory examination Nov./Dec. 2025

Course: Security & Speciality Printing

Code: K507

Duration: 03.00 Hours

Marks:70

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## Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Assume suitable data if necessary

### Q1. Answer the following questions. (Any 5)

10

- a. Write 2 reasons behind the use of security printing.
- b. State 4 ink based security features.
- c. Write 2 features of EAN13 bar code.
- d. Write 2 reasons behind the calibration of printing machine.
- e. List 4 printing process used in security printing.
- f. Name two 3D printing technologies.
- g. State 4 products manufactured with 3D printing.

### Q2 Answer the following questions. (Any 3)

12

- a. State working principle of fugitive and conductive inks.
- b. With diagram describe the working of diffraction structure.
- c. Write 4 features of gravure printing that are suitable in security printing.
- d. Describe the construction and specification of 3D printer.
- e. Describe required properties of pad material.

### Q3 Answer the following questions. (Any 3)

12

- a. State working principle of thermochromic and OVI inks.
- b. With diagram describe the working of copy void & microlines.
- c. Write 4 features of offset printing that are suitable in security printing.
- d. Describe the working principle of LOM & DMLS 3D printers.
- e. State characteristics ,causes & remedy of 2 pad printing related problems.

### Q4 Answer the following questions. (Any 3)

12

- a. Describe working of security fibers and security thread of substrates.
- b. State working principle and 4 advantages of digital printing.
- c. Describe working of SLA & FDM 3D printing technologies.
- d. Describe construction and specification of general pad printing machine.

### Q5 Answer the following questions. (Any 3)

12

- a. Classify security printed products.
- b. State working principle of MICR ink and MICR Cheque.
- c. Differentiate in 4 points- gravure & screen printing.
- d. State 4 features of additive manufacturing technologies.

### Q6 Answer the following questions. (Any 3)

12

- a. State working principle of watermark & glow in dark ink with one example.
  - b. Differentiate in 4 points - barcodes & holograms.
  - c. State working principle and application of variable data printing.
  - d. Describe inkjet & polyjet 3D printing technologies.
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