

Government Institute of Printing Technology, Mumbai

Even term end theory examination April/May 2026

Course: Communication Skill (English)

Code: K101

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.

Q1. Do as directed. (Any 10)

10

- a. Away (Write synonym of the given word).
- b. Marvellous (Write antonym of the given word)
- c. Derm (Add Prefix).
- d. Music (Add Suffix).
- e. I first met him _____ year ago. (use Article).
- f. He said to me, "I am giving a party in your honour." (Change into indirect speech)
- g. You are not allowed to dance. (Make it Affirmative).
- h. You are depending on that taxi driver. (Add question tag).
- i. I admire you the way you keep your cool, you do so in heavy traffic. (Make it Complex).
- j. All that glitters is not gold. (Make it simple).
- k. The man said to the girl I know you and your father. (Punctuate the sentence).
- l. If she does not practice, she cannot improve. (Use Unless).
- m. The weather is very pleasant. (Make it exclamatory).
- n. We started early so that we could reach on time. (Remove so that)

Q2 Answer the following questions. (Any 3)

12

- a. Explain the importance of relationship functioning harmoniously.
- b. Explain the requirement for true happiness.
- c. Describe the chaotic behavior of man.
- d. State the importance of determination in achieving a goal.

Q3 Answer the following questions. (Any 3)

12

- a. Write a paragraph on importance of technical education.
- b. Write a technical description of solar panel.
- c. Write a technical description of Gravure Printing machine.
- d. Write a paragraph about Digital India.

Q4 Answer the following questions. (Any 3)

12

- a. Make two sentences using the given homophones i) site, sight ii) Cereal, serial.
- b. Make a sentence using following collocations
i) Have a business trip ii) Go abroad iii) Go fishing iv) Make arrangements
- c. Write the meaning of following idioms and make a sentence of your own.
i) Get away ii) Settle down
- d. Change the voice
i). I will buy tickets for your return journey.
ii). Cricket has given me fame.
iii). The earth must have opened up and swallowed it.
iv). I agree this is an extreme case.

Q5 Answer the following questions. (Any 2)

12

- a. Write a dialogue between two friends discussing "How to choose a career?"
- b. Write a dialogue between students and examination clerk about the process of form filling.
- c. Draft a speech that you have to deliver in class on the occasion of mother's day.
- d. Write a report on a seminar on New Technology.

Q6 Read the following passage and answer the given questions.**08**

Self knowledge goes hand in hand with inner happiness and outer achievement. To perform at your best you need to know who you are and why you think and feel the way you do. You need to understand the forces and influences that have shaped your character from earliest childhood. You need to know why you react and respond the way you do to the people and situation around you. It is only when you understand and accept yourself that you can move forward in the other areas at your life.

- a. Questions-
- i). According to the passage, relate self knowledge to inner happiness and outer achievement.
 - ii). State the importance if understanding the force and influences that have shaped your character.
 - iii). Mention the stage when you move forward in other areas of your life.
 - iv). Explain the importance of self knowledge to contribute to performing at your best.

b. Attempt any two of the following**04**

- a. Explain the term gesture as a form of non-verbal communication.
 - b. State the importance of posture in face to face communication.
 - c. The teacher (point) at the black board when he (want) to write something. [Use appropriate form of the verbs given in the bracket].
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026

Course: Printing Processes

Code: K104

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. Write two ISO paper sizes.
- b. Write two limitations of print media.
- c. Write four prepress stages.
- d. Write two basic characteristics of image carrier.
- e. Write two types of binding styles.
- f. State two advantages of print media.
- g. Write principle of offset printing.

Q2 Answer the following questions. (Any 3)

12

- a. Explain GSM and Ream, Quire, Gross.
- b. Write 4 basic units of gravure machine with their function.
- c. Explain two characteristics of image carrier.
- d. Describe RIP process briefly.
- e. Differentiate conventional and digital printing up to four points.

Q3 Answer the following questions. (Any 3)

12

- a. Write four main ingredients of printing ink.
- b. Differentiate between sheetfed and webfed offset machine. (up to 4 points)
- c. Write two consumables and equipment used to prepare image carrier for screen printing.
- d. Explain CTP machine with schematic diagram.
- e. Write additives and subtractive color theories (up to 4 points)

Q4 Answer the following questions. (Any 3)

12

- a. Write names of two types of originals and describe them briefly.
- b. Differentiate between image carrier used for offset printing & flexography printing.
- c. Write common configurations of offset printing machine & describe them briefly.
- d. Write four basic materials required in binding department.

Q5 Answer the following questions. (Any 3)

12

- a. Explain four different applications of printing industry.
- b. Differentiate between CTP and image setter upto 4 points.
- c. Describe any two image carriers for conventional printing process.
- d. Draw schematic diagram of blanket to blanket configuration of printing machine.

Q6 Answer the following questions. (Any 3)

12

- a. Describe the meaning of I) color separation II) Resolution
 - b. Write names of four substrates used for printing.
 - c. Differentiate impact and non impact printing upto four points.
 - d. Explain the working principle of flexography and gravure.
 - e. Explain the classification of image carrier.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April/May 2026

Reg. No. _____

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. Use of non-programmable calculator is permitted.
3. Assume suitable data if necessary

Q1. Answer the following questions. (Any 5)

10

- a. State the meaning of direct proportion with one example.
- b. A screen printing machine can print a length of 150m per minute and the width of 2 m. Calculate area printed in one hour.
- c. State the meaning of simple interest with 1 example.
- d. Write 2 examples of compound interest.
- e. Describe the formula to calculate a volume of a cube.
- f. State Trapezoid rule.
- g. Write names of 2 types of graph.

Q2 Answer the following questions. (Any 3)

12

- a. A CTP machine can make 4 plates in 15 minutes. find how many plates can be prepared in 2 hours.
- b. A digital printer is purchased for principal amount of Rs. 25,00,000=00 by taking a loan at 12% per year. Find out compound interest for 3 years.
- c. Express following percentage as a fraction - I) 1.5% II) 3.33% III) 2.75% IV) 4.25%.
- d. Define mode and median. State one example each.
- e. Explain pie chart with one example.

Q3 Answer the following questions. (Any 3)

12

- a. Describe indirect proportion. State 2 examples.
- b. Calculate simple interest. Principal = Rs.5,00,000=00, rate per year = 50%, time = 5 years.
- c. Cost of binding per book is Rs.1.25. With the profit of 25%, 10000 books were bound. Find total amount.
- d. Calculate mean and median from the following data - 23, 47, 52, 52, 57, 59, 34, 16, 43, 61.
- e. Draw a bar graph from following data

Machine	Heidelberg	KBA	Komari	Ryobi
Production	42000	45000	40000	41000

Q4 Answer the following questions. (Any 3)

12

- a. Calculate simple and compound interest for principal = Rs.100=00, time = 10 years, rate =10% per year.
- b. Calculate surface area and volume of sphere of radius 7cm.
- c. Explain depreciation with one example.
- d. Describe the meaning and state one example. I) Range II) Co-efficient of range.

Q5 Answer the following questions. (Any 3)

12

- a. A players runs at a speed of 5 Kmph. Find out distance covered by him in 150 minutes.
- b. Find the volume of an ice cream cone $r = 2\text{cm}$, $h = 5\text{ cm}$. Also find surface area of 20 such cones.
- c. 20000 posters, Rs 425 per copy were sold with 25% profit. Find the total cost.
- d. Explain variance and co-efficient of variance.

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

1. Find compound interest for Rs.50000=00 for 5 years at the rate of 5 % per year.
2. Cost of preparing one plate is Rs.350=00 Find the amount of selling 375 plates with 10% discount.
3. Rate of depreciation = 10% per year straight, purchase cost of machine = Rs.50,00,000=00. Find out the depreciated cost of machine after 5 years.
4. Draw a line graph

Design time (min)	15	30	45	60
Digital printing time (min)	10	30	60	45

5. Find the mean.

Class interval	51-60	61-70	71-80	81-90
Frequency	2	4	8	3

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026

Course: Basic Science

Code: K201

Duration: 03.00 Hours

Marks: 70

Instructions to Candidates:

1. Attempt all questions and illustrate your answer with neat sketches wherever necessary.
2. Figure to the right indicate full marks.
3. Assume suitable data if necessary.
4. Level: R = Remember, U = Understand, A = Apply, CO: Course Objective, Ch: Chapter

Q. No	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	1	R	Define two system of units.	
B	1	R	State "force" Write SI unit of force	
C	2	R	Define acceleration. Write its SI Unit	
D	3	R	Define diffraction	
E	4	R	Define P^H .	
F	4	U	Distinguish between Atom and Ion with 2 points.	
G	5	R	Define "Ionisation".	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	U	Distinguish between fundamental and derived quantities.	
B	2	A	Explain Newton's laws of Motion derivation $f = ma$.	
C	3	R	Define reflection and refraction	
D	4	R	Define viscosity. State significance of viscosity in printing field.	
E	5	A	Explain electrolysis of aqueous NaCl solution by using platinum electrode with schematic representation.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	1	U	Distinguish between accuracy & precision.	
B	2	R	Define work, power with their SI unit.	
C	3	R	Define LASER. State properties of LASER.	
D	4	U	Distinguish between strong acid & weak acid.	
E	5	A	State and explain Faraday's second law of electrolysis with suitable neat labelled diagram.	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4 marks each)	12
A	1	R	State four formulas to estimate the errors in the measurement process.	
B	2	U	Distinguish between centripetal and centrifugal force. (up to 4 points)	
C	3	U	State and explain Snell's law of refraction with suitable diagram.	
D	4	U	State and explain Stoke's Law of viscosity.	
E	5	R	Define weak and strong electrolyte.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	1	A	Explain of MKS, CGS and SI & FPS system of unit.	
B	2	U	Distinguish between Speed and Velocity.	
C	4	R	Write any four requirements of standard units.	
D	5	R	State any four assumptions of Arrhenius Theory of electrolytic dissociation.	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	1	R	State needs of measurement in science and technology.	
B	2	R	State any four application of LASER.	
C	4	U	Define capillarity. Explain it with suitable example and diagram.	
D	5	U	Describe silver plating process with suitable diagram and schematic representation.	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026 Reg. No. _____

Course: Prepress Essential

Code: K202

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
4. Level: R = Remember, U = Understand, A = Apply, CO: Course Objective, Ch: Chapter

Q. No	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	1	R	List 2 primary colors of subtractive theory.	
B	1	R	List 2 secondary colors of subtractive theory.	
C	2	R	Write full form of CCD, CMOS.	
D	3	R	Write full form of RIP & PDF.	
E	4	R	State names of 2 color models.	
F	4	R	Write formula to find Delta E in CIE Lab model.	
G	5	R	Write full form of LPI & PPI.	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	R	List 2 standard light source characteristics & write 2 examples.	
B	2	U	Compare between CCD & CMOS up to 4 points.	
C	3	R	Write 4 properties of PDF.	
D	4	A	Elaborate function & significance of ICC.	
E	5	A	Elaborate ink trapping & write its formula.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	1	R	Define original. List 2 physical originals.	
B	2	U	Write function of screen angle. Also list screen angle for 4 color offset printing by process ink.	
C	3	U	Compare between vector & raster up to 4 points.	
D	4	A	Elaborate color gamut for CMYK with diagram.	
E	5	A	Elaborate construction & 1 application of densitometer	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4marks each)	12
A	1	U	Elaborate value & chroma of color.	
B	2	U	Elaborate working of flatbed scanner with labelled diagram.	
C	3	A	Explain ideal & actual reflection of CMYK process ink with diagram.	
D	4	U	Elaborate CIP 4.	
E	5	U	Describe construction of spectrophotometer.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	1	U	Differentiate between light & color up to 4 points.	
B	2	A	Elaborate magnification & scan resolution of scanner.	
C	3	U	Explain proportionally failure.	
D	4	A	Find color difference (ΔE) for the following $A_1(100, 2, 4)$, $A_2(98, 3, -4)$	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	1	A	List 4 properties of rods present in human eye. Also draw diagram of human eye.	
B	2	R	Differentiate between AM & FM up to 4 points.	
C	3	A	Elaborate under color removal (UCR) & grey component replacement (GCR).	
D	4	U	Calculate color difference & write comment about it. $B_1(90, -3, 3)$, $B_2(91, 3, -3)$	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026 Reg. No-_____

Course: Screen Printing Process

Code: K203

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
4. Level: R = Remember, U = Understand, A = Apply, CO: Course Objective, Ch: Chapter

Q. No	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	1	R	List 4 applications of screen printing.	
B	1	R	List 2 materials used in mesh manufacturing.	
C	2	R	State 2 factors deciding quality of mesh stretching.	
D	3	R	Write 2 photographic requirements of film.	
E	4	U	Differentiate up to 2 points - Flatbed & rotary screen printing.	
F	4	U	Draw diagram showing off-contact.	
G	5	R	List 2 applications of RFID.	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	U	Compare stencil & offset plate upto 4 points.	
B	2	U	Describe importance of theoretical ink volume of mesh.	
C	3	R	State stages involved in pneumatic mesh stretching.	
D	4	U	Draw schematic diagram of rotary & flatbed printing units.	
E	5	R	Write 4 advantages of screen printing regard to printed electronics.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	5	R	State 2 requirements of wool & cotton in screen printing.	
B	1	A	Write important developmental stages in screen printing.	
C	2	R	List 4 advantages of using aluminum frame.	
D	3	U	Differentiate direct & indirect screen making (4 points)	
E	4	U	Describe stages in screen printing of solar panel	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4 marks each)	12
A	1	R	Write 4 limitations of screen printing.	
B	2	U	Draw diagrams of 4 squeegee profiles.	
C	3	R	State stages involved in direct screen making.	
D	4	R	Write 2 characteristics 2 causes and 2 remedies of any one screen printing problem.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	1	R	Write 4 advantages of screen printing.	
B	2	R	Write 2 factors each for selections of mesh & frame.	
C	3	R	State stages involved in the direct screen making.	
D	4	U	Describe working of Bar-code. Also state its 2 graphic requirements.	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	1	R	Write 2 materials along with 1 property used to make squeegees.	
B	2	R	Write 4 advantages of computer to screen technique.	
C	3	U	Describe the effect of variation in squeegee angle & pressure on inking	
D	4	R	Write 2 physical properties of Wool & Silk.	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026 Reg. No: _____

Course: Printing Material Science

Code: K301

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. Define Viscosity and its unit.
- b. Elaborate pulp and paper.
- c. Explain term 'Food grade'.
- d. Define GSM, write example for particular application.
- e. State 4 advantages of recycled paper over plastic.
- f. What is Cobb value.
- g. Define whiteness of fabric.

Q2 Answer the following questions. (Any 3)

12

- a. Explain treatments carried out on textile.
- b. Draw diagram of pulp beating machine with labels.
- c. Explain factors affecting paper dimensional stability.
- d. Explain working of film extrusion machine with diagram.
- e. Explain term- rheology, opacity, density.

Q3 Answer the following questions. (Any 3)

12

- a. Explain paper manufacturing process, step wise.
- b. Define & explain any two physical properties of paper.
- c. Explain use of synthetic materials in textile printing.
- d. Draw diagram of co-extrusion process.
- e. Write purpose any four ingredients in ink.

Q4 Answer the following questions. (Any 3)

12

- a. List sectors and product application of textile printing.
- b. Explain classification of pigments.
- c. Define classification of plastic materials.
- d. Draw diagram of bursting tester and significance of bursting strength.

Q5 Answer the following questions. (Any 3)

12

- a. Draw diagram of calendering & coating unit for paper.
- b. Explain optical properties of paper.
- c. Define properties of polymeric substrate.
- d. Explain working of three roll mill with diagram.

Q6 Answer the following questions. (Any 3)

12

- a. Explain thermochromic, MICR properties.
 - b. Define sustainability cycle for plastic.
 - c. Explain effect of grain direction on tear and tensile strength.
 - d. Draw diagram of paper making machine with labels.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April- May 2026 Reg. No. _____

Course: Offset Printing Process

Code: K302

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. Classify offset plates.
- b. State 2 advantages of waterless offset printing process.
- c. List 2 types of feeders used on offset printing machine.
- d. Write 2 functions of dampening system.
- e. Draw schematic diagram of any one reel stand.
- f. Write working principle of reel braking system.
- g. State 2 causes of ink mottling.

Q2 Answer the following questions. (Any 3)

12

- a. Draw diagram of portrait & landscape pages and show fore-edge, head, tail and back.
- b. List 4 measures taken in offset printing from sustainability perspective.
- c. Describe front & side lay working.
- d. Draw schematic diagram of Y type web offset printing machine.
- e. Describe working of bustle wheel.

Q3 Answer the following questions. (Any 3).

12

- a. Describe workflow of CTP department.
- b. Compare offset with gravure printing up to 4 points.
- c. Draw diagram of conventional inking system.
- d. Describe working of dancer roller tension control system.
- e. Describe the scope of ML (Machine learning) in offset printing.

Q4 Answer the following questions. (Any 3)

12

- a. State 4 specifications of violet plate.
- b. Compare sheetfed and webfed offset upto 4 points.
- c. Draw schematic diagram of multi roll inking system.
- d. State working principle of hot air blower & UV ink dryer.
- e. Describe the scope of AI (Artificial intelligence) in offset printing

Q5 Answer the following questions. (Any 3)

12

- a. State 4 characteristics of waterless offset printing.
- b. Describe working of metal printing machine.
- c. Draw schematic diagram of plate cylinder showing its parts.
- d. Describe working of flying speed splicer.

Q6 Answer the following questions. (Any 3)

12

- a. List any two manufactures of ink and offset machine
 - b. Compare screen and offset printing up to 4 points.
 - c. Describe construction of sheetfed offset machine delivery unit.
 - d. Explain with diagram, working of jaw folder.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April/ May 2026

Reg No- _____

Course: Printed Electronics

Code: K303

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. Name any four printing process used to make printed electronics.
- b. List any 4 applications of printed electronics.
- c. State resolution & registration requirements of any 1 printing process in making printed electronics.
- d. State 2 required electrical properties of substrates used in making printed electronics.
- e. Write any 2 advantages of screen printing from printed electronics manufacturing point of view.
- f. Write the working principle of transfer printing process used in manufacturing printed electronics.
- g. Write the working principle of OLED display & list its two applications.

Q2 Answer the following questions. (Any 3)

12

- a. Write any 4 advantages of printed electronics.
- b. Describe the working and applications of flexible printed electronics.
- c. State any 4 physical properties of substrate used in printed electronics.
- d. Give 2 examples each of organic and inorganic materials used in printed electronics. Also state one application of each.
- e. Write working principle of inkjet printing and state its 2 advantages from printed electronics point of view.

Q3 Answer the following questions. (Any 3)

12

- a. Differentiate printed electronics from conventional electronics.
- b. Describe printed electronics production process using flexography.
- c. List different types of inks used in printed electronics manufacturing. Also list one application of each.
- d. Describe printed electronics manufacturing using inkjet printing.
- e. Describe aerosol based printing process used to make printed electronics. Write its 2 applications.

Q4 Answer the following questions. (Any 3)

12

- a. Classify printed electronics manufacturing processes.
- b. Compare inkjet and screen printing processes on the basis of any 4 printed electronics parameters.
- c. Describe any 2 tests carried out on the substrate and ink in manufacturing printed electronics.
- d. State the examples of addressing the objectives of sustainability in manufacturing printed electronics.
- e. Classify the printing processes used in manufacturing printed electronics.

Q5 Answer the following questions. (Any 3)

12

- a. Define IoT and describe scope of printed electronics IoT.
- b. Write 4 challenges before printed electronics manufacturing.
- c. Describe printed electronics manufacturing using the screen printing process.
- d. State any 4 ideal storage conditions for inks and substrates used to make printed electronics.

Q6 Answer the following questions. (Any 3)

12

- a. List any 2 roll to roll based printing processes. State their 2 advantages in manufacturing printed electronics.
 - b. State any two standards along with 2 recommendations of each developed for printed electronics industry.
 - c. Differentiate upto 4 points OLED & LED displays.
 - d. Describe working of interactive package and state its 2 applications.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April/May 2026

Reg. No. _____

Course: Flexographic Printing Process

Code: K304

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. Write registration number on question paper in

Q1. Answer the following questions. (Any 5)

10

- a. What is flexography printing?
- b. State 2 advantages of inline flexographic machine.
- c. Define laminations.
- d. What is the function of unwinder?
- e. Mention any 2 types of anilox roller cells.
- f. Mention 2 applications of flexography printing.
- g. Mention 2 ingredients of flexography inks.

Q2 Answer the following questions. (Any 3)

12

- a. With a neat diagram explain the different parts of a flexographic unit press.
- b. Explain the following properties of image carrier - I) hardness II) thickness.
- c. Explain any 2 finishing operations done after flexographic printing.
- d. Explain any 2 troubles and troubleshooting done while printing on flexographic process.
- e. Explain in details the process of IML.

Q3 Answer the following questions. (Any 3)

12

- a. Explain in detail the working principle of flexographic printing process.
- b. Explain about the exposure light sources and range used for the manufacturing of flexographic image carriers.
- c. With a neat diagram explain stack configuration of flexographic printing press.
- d. Explain any 1 type of flexographic inking system.
- e. Explain any 2 troubles and trouble shooting done with respect to ink used in flexographic printing process.

Q4 Answer the following questions. (Any 3)

12

- a. With a diagram explain doctor blade mechanism.
- b. With flowchart explain the steps involved in CTP plate making process.
- c. What is the use of anilox roller? Also mention any 2 design considerations.
- d. Explain the construction of hybrid flexographic printing process.
- e. Explain in details extended gamut printing.

Q5 Answer the following questions. (Any 3)

12

- a. Explain the different parts of flexographic image carrier with diagram.
- b. Explain the similarity and difference between varnishing and lamination.
- c. Explain automation process of plate mounting.
- d. Explain about any 2 substrates used for sustainable flexographic printing process.

Q6 Answer the following questions. (Any 3)

12

- a. State the difference between traditional and CTP plate making process.
 - b. With a diagram explain common impression flexographic process.
 - c. Explain the different ink metering equipment used.
 - d. Mention any 4 eco-friendly ingredients used in flexographic printing process.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April/May 2026

Course: Gravure Printing Process

Code: K402

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
4. Levels: R = Remember, U = Understand, A = Apply, CO: Course Objective

Q. No	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	1	R	State working principle of gravure process.	
B	1	U	Describe how electroplated layer is reclaimed	
C	2	R	Write names of 2 gravure cell shapes	
D	3	R	State names of 2 doctor blade materials	
E	4	R	Write names of 2 solvents used in gravure ink.	
F	4	R	State names of 2 surface treatments.	
G	5	U	State the meaning of in-process colour control	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	U	Draw a schematic diagram of gravure printing process.	
B	2	U	Describe working principle of electronic engraving.	
C	3	A	Explain the meaning of dynamic balance.	
D	4	R	Write names of 4 substrates and 2 finishing operations.	
E	5	A	Explain sustainability related to gravure process.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	1	U	Describe the construction of electroplating unit.	
B	2	R	Write 2 types and 2 properties of laser used for engraving.	
C	3	A	State 2 troubles & their remedies related to the doctor blade.	
D	4	U	Describe 2 QC tests related to gravure printing.	
E	5	U	Describe the function of stroboscope.	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4 marks each)	12
A	1	A	Compare gravure process with screen printing up-to 4 points	
B	2	A	Explain how proofing of gravure cylinder is done.	
C	3	A	Explain the principle & purpose of ESA.	
D	4	U	State 4 end use requirements of gravure printed products	
E	5	U	Describe 2 waste disposal approaches.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	1	R	State 4 variables related to electroplating.	
B	2	R	State 2 characteristics each of electrochemical and laser engraving.	
C	3	U	Describe the function of impression roller. State its hardness range.	
D	4	U	Describe corona discharge treatment.	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	1	A	Compare gravure process with offset process upto 4 points.	
B	2	R	Write names of 4 gravure machine manufacturers.	
C	3	A	State any 2 troubles & remedies related to gravure printing.	
D	4	U	Describe any 2 types of ink drying mechanisms	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April/ May 2026

Reg.No. _____

Course: Rigid packaging process

Code: K403

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
4. Level: R = Remember, U = Understand, A = Apply, CO: Course Objective, Ch: Chapter

Q. No	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	1	R	Write two example of secondary package.	
B	2	R	Write flute dimension of B and C type flutes.	
C	2	R	State any 2 applications of corrugated board packaging.	
D	3	R	State 2 advantages of using tin plate for packaging	
E	4	R	State 2 properties of glass packaging.	
F	5	R	State 2 sustainable packaging materials.	
G	5	R	List down 2 tests performed on rigid packaging for transportation.	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	A	Explain any 2 primary & 2 secondary function of package.	
B	2	U	Draw and explain 5 ply corrugated board structure.	
C	3	R	State properties and application of aluminium foil in packaging.	
D	4	A	Explain the blowing process used for manufacturing glass bottles.	
E	5	U	Write short note on role of AI in packaging industry.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	1	U	Elaborate the importance of climatic consideration in packaging.	
B	2	A	Explain FEFCO standard & it's function.	
C	3	A	Explain 2 piece can manufacturing.	
D	4	U	List & explain 2 advantages & 4 limitations of glass as packaging materials.	
E	5	A	Explain WVTF (water vapour transmission rate) test with its importance.	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4 marks each)	12
A	1	U	Write short notes on primary package & its function with example.	
B	2	U	Draw a keyline of STE of 5cm x 3cm x 6cm. Mention 2 applications.	
C	3	R	Mention 2 applications, 2 advantages and 2 disadvantages of aerosol containers.	
D	4	U	Write short note on quality control checks in glass packaging.	
E	5	A	Explain the concept of sustainable materials in packaging with 2 examples.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	2	U	With a neat flow diagram, explain the carton manufacturing process.	
B	3	R	Write 4 functions of cushioning material.	
C	4	A	Explain in detail, the different raw materials used in glass bottle manufacturing.	
D	5	R	Write a short note on MAP. List 2 advantages & application area.	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	2	U	Write short not on ECMA & its function.	
B	3	R	List 4 advantages of metal, 2 limitations & 2 applications.	
C	4	A	Elaborate any one after treatment given to glass application	
D	5	R	Write rigid packaging materials used for the following I) Mobile phone II) Ghee III) Cold syrup IV) Premium chocolate	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April/May 2026

Reg No: _____

Course: Supply Chain Management in Printing

Code: K404

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
4. Level: R = Remember, U = Understand, A = Apply, CO: Course Objective, Ch: Chapter

Q. No	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	2	R	Define inventory. State one example.	
B	2	R	List 4 terms related to supply chain management.	
C	3	R	State full form of WIP, JIT.	
D	3	R	List 2 tools used in track inventory.	
E	4	U	Describe the meaning and supply chain cycle time.	
F	4	R	Write names of two international courier companies.	
G	5	R	List 2 raw materials used in print industry that cause pollution.	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	U	Describe two applications of SCM in printing industry.	
B	2	U	Describe two functions of ERP software.	
C	3	R	State 2 advantages & 2 limitations of road transport.	
D	4	R	Write 2 advantages & 2 limitations of direct distribution channel.	
E	5	U	Describe 2 applications of drone in SCM.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	1	R	List 4 components of SCM.	
B	2	R	Write names of two ERP software. Also state 2 advantages of it.	
C	3	U	List 8 raw materials used in screen printing.	
D	4	A	State 2 troubles used & their remedies related to SCM.	
E	5	U	Describe 4 advantages of six sigma.	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4 marks each)	12
A	1	U	Describe with example, why production planning is necessary.	
B	2	A	List 4 practices related to sustainability in printing.	
C	3	A	Define EOQ. State its 2 characteristics.	
D	4	U	Compare direct & indirect distribution channels. (up to 4 points)	
E	5	R	Write 4 characteristics of ESC.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	1	U	Write stages in production planning of newspaper.	
B	2	U	Compare gravure printing with offset printing (up to 4 points)	
C	3	R	State 2 advantages & 2 limitations of air transport.	
D	4	A	Explain the meaning of 'Inventory turnover' with 2 example.	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	1	A	Create production plan for production distribution of 5,00,000 calendars.	
B	2	U	Define carbon footprint & discuss its importance in 2 printing process.	
C	3	U	State and describe two factors related to transport mode (air, road etc.) selection.	
D	4	A	Briefly discuss 4 factors considered to select proper distribution channel for newspaper SCM.	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026 Reg. No. _____

Course: Environmental Education and sustainability

Code: K406

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
4. Level: R = Remember, U = Understand, A = Apply, CO: Course Objective, Ch: Chapter

Q. No.	CO	Level	Question	Mark
1			Attempt Any Five (2 marks each)	10
A	1	R	Define "non-renewable sources"	
B	1	R	Define "natural resources"	
C	2	R	State any two aspects of ecosystem.	
D	3	R	Define pollution.	
E	4	R	State any two causes of water pollution.	
F	4	R	State any two articles for the environmental protection.	
G	5	R	State two applications of solar energy.	
Q. No	CO	Level	Question	Mark
2			Attempt Any Three (4 marks each)	12
A	1	A	Explain the concept of 5R with reference to the waste management.	
B	2	A	Explain the need of optimum use of natural resources.	
C	3	U	Write the importance of biodiversity.	
D	4	U	State the preventive measures to control the air pollution.	
E	5	A	Explain the importance of public participation in environmental protection.	
Q. No	CO	Level	Question	Mark
3			Attempt Any Three (4 marks each)	12
A	1	A	Explain the factors contributing to climate change.	
B	2	U	Explain the new energy sources as a green solution to environmental issues.	
C	3	U	Explain the need of conservation of biodiversity.	
D	4	R	State CPCB norms of ambient air quality in residential area	
E	5	A	Explain the role of information technology in environmental protection.	
Q. No	CO	Level	Question	Mark
4			Attempt Any Three (4 marks each)	12
A	1	A	Explain the concept of zero carbon footprint with carbon credit.	
B	2	A	Explain the over exploitation of natural resources on the environment.	
C	3	A	Explain the need of conversation of ecosystem.	
D	4	U	State the BIS water quality standard for domestic potable water.	
E	5	U	State the green technologies to provide sustainable solution of environmental problems.	
Q. No	CO	Level	Question	Mark
5			Attempt Any Three (4 marks each)	12
A	1	U	Explain the need of studying environment education.	
B	2	A	Differentiate between renewable and non-renewable sources of energy.	
C	4	R	State any four measures of soil conversation.	
D	5	U	Explain the constitutional provisions related to the environmental protection.	
Q. No	CO	Level	Question	Mark
6			Attempt Any Three (4 marks each)	12
A	1	R	State the effect of population growth to the environment.	
B	2	R	Define (i) Geothermal energy (ii) Biomass energy.	
C	3	R	State the functions of ecosystem.	
D	4	R	State the norms of Maharashtra State Government to control the pollution.	

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2026

Course: Quality Control In Printing

Code: K501

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. State 2 paper properties checked for quality.
- b. Write names of 2 quality improvement tools.
- c. State the objectives of ISO 9000 & ISO 14000.
- d. State the meaning of mode with 1 example.
- e. Write 4 steps in 5S.
- f. Describe the meaning of sampling.

Q2 Answer the following questions. (Any 3)

12

- a. Explain - Histogram with example.
- b. State 2 objectives of quality control.
- c. Describe - I) FOGRA II) TAPPI
- d. Find mean and median: 184, 211, 705, 626, 705
- e. Explain the meaning of SPC. State its 2 applications in printing industry.

Q3 Answer the following questions. (Any 3)

12

- a. Write 4 responsibilities of QC officer.
- b. Calculate Delta E for the following
 - I) $L_1=53, L_2=54, a_1=55, a_2=56, b_1=57, b_2=58$
 - II) $L_1=24, L_2=42, a_1=12, a_2=10, b_1=15, b_2=15$
- c. Explain the meaning of press calibration. State its 2 advantages.
- d. Describe: Kaizen in management.
- e. Describe the meaning of variables and attribute with one example each.

Q4 Answer the following questions. (Any 3)

12

- a. Describe 4 QC tests performed on flexo printed labels.
- b. State purpose and application of I) SWOP II) G7.
- c. State the formula of standard deviation and variance. Write one example each.
- d. Explain the meaning of I) probability sampling II) non probability sampling.

Q5 Answer the following questions. (Any 2)

12

- a. Write names & purpose of 6 QC instruments used in printing and packaging.
- b. Explain the 6 contents & their purpose in color control bar.
- c. State 6 features of ISO12647.

Q6 Answer the following questions. (Any 2)

12

- a. Describe I) Dot gain II) Trapping III) Gray Balance.
- b. Explain 'six sigma' technique.
- c. 12 samples each of size 25 of offset printed sheets were tested for density variation. Result is given below. Draw 'P' chart

Sample no	1	2	3	4	5	6	7	8	9	10	11	12
No. Of defective	4	1	2	2	0	7	4	6	3	1	4	2

Government Institute of Printing Technology, Mumbai

Even term and theory examination April / May 2026

Course: Flexible Packaging Process

Code: K502

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. Name 4 types of packaging methods.
- b. Name 2 different lamination processes.
- c. Name the type of packaging material used for sweets.
- d. Write full form of PVC, PS.
- e. Name the packaging material used for pharmacy tablet packaging.
- f. Write full form of MAP, CAP
- g. Name 2 types of material used for butter packaging.

Q2 Answer the following questions. (Any 3)

12

- a. What is lamination. Draw schematic diagram of any one lamination process.
- b. What is shrink packaging. Explain with diagram.
- c. With diagram; explain plastic film manufacturing by blown film extrusion.
- d. What is blister packaging with its advantages.
- e. List 4 properties of I) HDPE II) LDPE

Q3 Answer the following questions. (Any 3)

12

- a. What is CAP technology. Elaborate.
- b. Write difference between stretch packaging & shrink packaging with example.
- c. List type of laminated tubes. Elaborate any one of it.
- d. Describe aseptic packaging.
- e. Elaborate EPR. List its 2 advantages.

Q4 Answer the following questions. (Any 3).

12

- a. Describe MAP. List its 2 advantages & 2 applications.
- b. With neat diagram; elaborate horizontal form fill machine. List 2 applications.
- c. Name the different technique of sealing method & type of sealers.
- d. List 4 advantages, 2 limitations & 2 applications of aseptic packaging.
- e. Draw diagram of extruder write its function.

Q5 Answer the following questions. (Any 3)

12

- a. With neat diagram; explain vacuum packaging.
- b. Draw schematic diagram of Tetra Pak with layers, write function of each layer.
- c. Write packaging material for I) cheese II) cold drink III) bread IV) milk.
- d. List 4 properties of I) PVC II) PP

Q6 Answer the following questions. (Any 3)

12

- a. Explain any one type of active label.
 - b. Elaborate edible packaging list its 2 advantages.
 - c. Compare between thermoset & thermoplastic upto 4 points.
 - d. Elaborate Retort packaging. Also draw elaborate its layer diagram.
-

Government Institute of Printing Technology, Mumbai

Odd term end theory examination April / May 2026 Reg. No. _____

Course: Management

Code: K503

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. Write any 2 definitions of management.
- b. List 4 functions of management.
- c. Define product development.
- d. Define operations management.
- e. Define project management.
- f. State any 4P's of marketing.
- g. Write 2 functions of customer relationship management.

Q2 Answer the following questions. (Any 3)

12

- a. Describe planning function of management with suitable example.
- b. State 6 thinking hats along-with role associated with them.
- c. Define brainstorming and describe any one type of it.
- d. Define demand and need.
- e. Describe scope of supply chain.

Q3 Answer the following questions. (Any 3)

12

- a. Explain work study and motion study.
- b. Draw the life cycle curve of a product and describe growth phase in it.
- c. Describe working of Kanban card system.
- d. State 4 functions of marketing department.
- e. Describe role of information technology in supply chain and logistic management.

Q4 Answer the following questions. (Any 3).

12

- a. Describe motivating function of management with example.
- b. State steps for sustainable product design.
- c. Write 4 advantages of lean manufacturing.
- d. Differentiate marketing from sales. (4points)

Q5 Answer the following questions. (Any 3)

12

- a. State stages involved in new product development.
- b. Write any 4 recommendations of OSHA 2020.
- c. Describe organization structure of marketing department.
- d. State 4 objectives of logistics management.

Q6 Answer the following questions. (Any 3)

12

- a. Write 4 differences between Fayol & Taylor theories of management.
 - b. Describe creativity and innovation.
 - c. Differentiate traditional marketing from digital marketing using 4 basis.
 - d. Write 4 functions of human resource management.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April/May 2026

Course: Security & Speciality Printing

Code: K507

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. Define security printing?
- b. List any 4 security features.
- c. Define calibration. State its 2 applications.
- d. What does MICR stand for?
- e. What is additive manufacturing?
- f. List any four 3D printing technologies.
- g. Write any 2 features of pad printing.

Q2 Answer the following questions. (Any 3)

12

- a. Describe working of thermochromic ink.
- b. Differentiate upto 4 points - microlines & microtext.
- c. Write 4 features of screen printing from security perspective.
- d. Describe working of SLA.
- e. Write 4 advantages of pad printing.

Q3 Answer the following questions. (Any 3)

12

- a. State working principle of OVI & MICR inks.
- b. Describe working of latent image security feature.
- c. Write any 4 gravure printing features useful in security printing.
- d. Describe working of FDM.
- e. List any 4 printing troubles encountered in pad printing.

Q4 Answer the following questions. (Any 3)

12

- a. State 2 applications each of security fibers & threads.
- b. Differentiate upto 4 points - micro foil stamping & punching.
- c. Write 4 advantages of variable data printing.
- d. Describe application area of 3D printing.

Q5 Answer the following questions. (Any 3)

12

- a. Differentiate upto 4 points- Uv ink & Photo chromic ink in security printing.
- b. Differentiate upto 4 points - Barcode & RFID.
- c. Describe calibration process of offset printing.
- d. Write 4 limitations of 3D printing Technology.

Q6 Answer the following questions. (Any 3)

12

- a. Describe in detail, application area of security printing.
 - b. Classify bar codes along with applications.
 - c. List printing process used in variable data printing along with 2 features.
 - d. Describe working of DMLS.
-