Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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.
3. Assume suitable data if necessary

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

a. Destroy (Write synonym of the given word).
b. Random (Write antonym of the given word).
c. Meter (Add Prefix)
d. Teach (Add Suffix).
e. _____ eye is blue or brown. (Use Articles).
f. The book will carry the child name. (Add question Tag).
g. Shweta said to Preeta,"He has gone home". (Change into indirect speech)
h. The news is too good to be true. (Remove 'too').
i. Sachin is fine batsman. (make it exclamotory).
j. Why don't you work hard? (Make it simple sentence).
k. I have never forgotten it. (make it Affirmative)
l. Every system of government is imperfect. (Make it Negative).
m. He is both an artist and a dancer. (use 'not only --but also')
n. The king said why do you wish to prolong your suffering. (Punctuate the sentence)

Q2 Answer the following questions. (Any 3) **12**

a. Explain the importance of mindset in achieving success.
b. Explain the importance of self knowledge to contribute to performing at your best.
c. State the importance of introducing IQ test in the recruitment process.
d. Explain the importance of believing in oneself.

Q3 Answer the following questions. (Any 3) **12**

a. Write a technical description of 3D printer
b. Write a technical description of "power drill machine".
c. State the tips of reducing nervousness while presenting.
d. Write a paragraph on "global warming".

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

a. Make a sentence using following collocations.
   i) Have a business trip ii) Do harm iii) Make an attempt iv) Take a break
b. Make two sentences using the given homophones i) Pair, Pear ii) break, brake
c. Write the meaning of following idioms and make a sentence of your own.
   i) Ups and down ii) At home
d. Change the voice

i). The hunter shot the door
ii). All scientist know this fact.
iii). The school will provide transportation.
iv). You have kindled in them a desire to excel.

p.t.o

Q5 Answer the following questions. (Any 2) **12**

a. Develop a dialogue between friends about the Indian education system.
b. Develop a dialogue between two friends about ambition in life.
c. Write a diary entry – 'When I helped a needy'.
d. Write a speech for farewell day function for a retired teacher of your college..

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

Just as peace of mind is your normal and natural mental state, experiencing health and energy is your normal and natural physical state. Your body has a natural bias towards health. It produces energy easily and in abundance in the absence of mental or physical interference and radiant health exists in the absence of any pain illness or disease wonderfully enough, your body is constructed in such a way that if you just stop doing certain things to it, it often recovers and becomes healthy and energetic all by itself.

If you achieve great things in the material world but lose your health or your peace of mind. You get little or no pleasure from your other accomplishments.

a. Questions-
i). Write the meaning of natural mental state.
ii). Describe your body's natural inclination when it comes to health and energy.
iii). State the condition which defines radiant health in the passage.
iv). Achieving great things in the material world is not enjoyable under certain circumstance" justify.

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

a. State the importance of dressing up well at the workplace.
b. What is the role of preparation in delivering a successful presentation.
c. He (sit) in the garden when the snake (come) out. (use appropriate form of the verbs given in the bracket)

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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. State 2 limitations of print media.
b. Define the term color correction.
c. List any 2 consumables used in image carrier making for offset plate.
d. State 2 configurations of gravure printing presses.
e. State 2 ISO paper sizes.
f. State 2 conventional printing process.
g. State any 2 binding materials.

Q2 Answer the following questions. (Any 3) **12**

a. Differentiate between conventional and digital printing process. (upto 4 point)
b. With neat diagram explain imposition scheme.
c. Describe the stages involved in image carrier manufacturing for screen printing process.
d. Explain the function of feeding unit and delivery unit on a web fed printing process.
e. State 2 manufactures each of digital printers and graphic software.

Q3 Answer the following questions. (Any 3) **12**

a. Write names of any 6 renowned printing companies.
b. Explain the different stages of prepress.
c. State the functions and characteristics of gravure cylinder.
d. Differentiate between sheetfed and web fed printing process.(upto 4 points)
e. Explain in detail the different paper quantity measurement used in printing industry. (Ream,Quire)

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

a. Explain the process of computer to plate.
b. Explain characteristics of any 2 types of image carriers used in printing industry.
c. With appropriate diagram explain screen printing process.
d. Define the terms - GSM, Opacity, Caliper.

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

a. Define the terms- prepress, press and post press.
b. What is an image setter? State its application.
c. What is an image carrier? State any 2 image carriers used in printing industry.
d. With neat diagram explain the working principle of flexography printing process.

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

a. With neat diagram explain subtractive color theory.
b. Define imposition and explain the process of work and turn.
c. In which printing process do we use thermal image carrier? State its characteristics.
d. Explain the different parts of single color offset machine.
e. Explain in details any binding styles used in book manufacturing.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 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. Use of non-programmable calculator is allowed.

Q1. Answer the following questions. (Any 5) **10**

a. 5 liter printing ink costs Rs.1000. by same proportion, find the cost of 25 liter ink.
b. Flexographic machine prints 10km cloth in 1 hour. How many km cloth will be printed in 600 minutes.
c. A screen printing machine is to be purchased on loan. Capital / principal = Rs 5,00,000 time = 3 years, rate of interest = 8%. Find compound interest.
d. Describe the formula to calculate simple interest.
e. Write the formula to calculate volume of a sphere.
f. Discribe Simpson's rule.
g. Find the mean of wastage sheets in a printing press for 5 shifts : 25, 32, 44, 157, 69

Q2 Answer the following questions. (Any 3) **12**

a. 1000 printed sheets are to be distributed to the three binding machines in proportion 2:3:5. find the number of sheets received by each binding machine (first, second, third)
b. One CTP offset plate costs Rs.400. Find the cost of 16 plates and 10% profit over it. Write the total cost.
c. Define direct proportion and indirect proportion, state two example of each.
d. Draw a bar graph using following data

News paper	Times	Lokmat	HT	Sakal
Sale (X1000)	55	25	40	30

e. Draw a piechart using following data.

Process	Flexo	Screen	Offset	Gravure
Machine	45	90	135	90

Q3 Answer the following questions. (Any 3). **12**

a. A scooter travels 120 km in 3 hours and a train travels 120 km in 2 hours. Find ratio of their speeds.
b. Find the difference between simple interest and compound interest on Rs.100 for 10 years at 10% per year.
c. Cost of printing 1000 sheets is Rs.60 per color. Find the cost of printing 5000 sheets in four colors.
d. Describe 'co-efficient of range'. state 2 examples.
e. Explain 2 applications of bar chart with diagram.

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

a. Rs 20000 were invested in a press. This amount appreciated by 15% per year. Find the total value after 4 years.
b. Volume of cube is 125 liters. Calculate its surface area. Also write the formula to calculate volume and surface area and units of measurement.
c. Define depreciation. Describe any one type of it.
d. Find the mean of the following data.

Class interval	10-20	21-30	31-40	41-50
Frequency	5	6	7	7

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

a. 1000 banners can be completed by Konica in 4 hours and by HP in 2 hours. If these machines work for 16 hours each. Find the total number of banners completed.

b. Find the volume of cylindrical container if radius is 0.25m and height is 1.25m.

c. A book costs Rs.175 per copy. 25,000 such book were sold with 5% profit. Find the total cost.

d. Explain the meaning of standard deviation with one example.

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

a. Find compound interest on Rs 1,00,000 for 2 years at the rate 12% per year.

b. Cost of designing A4 size page is Rs.50 per page. Find the total cost of designing 256 such pages with 5% profit.

c. Find the mean of: 323.23, 332.32, 332.32, 323.17

d. Draw a line graph.

Screen making time (min)	25	27	30	35
Screen printing time (min)	45	50	55	60

e. Convert the following fractions in percentage
(i) 1/4 (ii) 1/3 (iii) 2/3 (iv) 1/5

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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. Figures to the right indicate full marks.
3. Assume suitable data if necessary

Q1. Answer the following questions. (Any 5) **10**

a. Define unit, write examples of it.
b. Write the meaning of MKS.
c. Define 'Force', write SI unit of Force.
d. Define "diffracton"
e. Write two properties of acid.
f. Define 'Ionisation'.
g. Define electroplating.

Q2 Answer the following questions. (Any 3) **12**

a. Differentiate between fundamental quantities and derived quantities. (upto 2 points).
b. Define energy. State law of conservation of energy.
c. Define and explain reflection of light with suitable diagram.
d. Differentiate between strong acid and weak acid.
e. State and explain Faraday's second law of electrolysis with suitable neat labelled diagram.

Q3 Answer the following questions. (Any 3) **12**

a. Write 2 points each about accuracy and precision.
b. State and explain Newton's second law of motion (F=ma).
c. State any four applications of LASER in printing technology.
d. Define "angle of contact". Explain it with suitable diagram.
e. Explain electrolysis of (Cuso4) solution by using copper electrode with labelled diagram and schematic representation.

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

a. Write the need of measurements in science and engineering.
b. Define (I) acceleration (II) retardation.
c. State and explain Snell's law of refraction with suitable diagram.
d. Define (I) Lewis acid (II) Lewis base.
e. 0.1978 gm of copper were deposited by a current of 0.2 ampere in 50 minutes, what is the electrochemical equivalent of copper?

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

a. Define error. State 2 types of error.
b. Differentiate between centripetal force and centrifugal force.
c. Define i) p^H ii) p^{OH}
d. State any four postulates (assumptions) of Arrhenius Theory of electrolytic dissociation.

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

a. State any four requirements of standard unit.
b. State any four properties of LASER.
c. Define (I) Adhesive force (II) Cohesive force.
d. Describe silver plating process with suitable diagram and schematic representation.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

Course: Prepress Essentials 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

Q1. Answer the following questions. (Any 5) **10**

a. List 2 primary & 2 secondary colors of additive theory.
b. Differentiate up to two points - light and color.
c. List any two image capturing elements used in digital photography.
d. Write full form of UCR and GCR.
e. List any four color models used in prepress.
f. Write two applications of spectrophotometer.
g. State LPI reproductive range of different printing technologies.

Q2 Answer the following questions. (Any 3) **12**

a. Describe characteristics of standard CIE observer.
b. With diagram explain the construction of flatbed color scanner.
c. Differentiate up to 4 points RGB and CMYK based color reproduction.
d. Draw schematic diagram of CIELab Color Model.
e. Explain Delta E with suitable formula

Q3 Answer the following questions. (Any 3) **12**

a. Describe any two attributes of color.
b. Differentiate up to 4 points - FM and AM screening.
c. Explain with example - additivity failure.
d. Write characteristics of Pantone color specification.
e. Tabulate screen angles for offset, screen & flexography.

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

a. Describe with example scan resolution & bit depth.
b. Differentiate upto 2 points - device dependent and device independent color spaces.
c. Explain importance of color gamut.
d. Describe construction of spectrophotometer.

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

a. Describe metamerism with suitable examplel.
b. Differentiate upto 4 points - CCD and CMOS.
c. Write 4 limitations of CMY process inks.
d. Explain scope of CIP4 technology.

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

a. State types of halftone dot shape with one use.
b. Write functions & limitations of rods & cons.
c. Define preflighting and state stages in it.
d. Describe with diagram,working of colorimeter.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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

Q1. Answer the following questions. (Any 5) **10**

a. Write working principle of screen printing process.
b. List two different materials used in mesh making.
c. State angle and tension maintained in mesh stretching.
d. List different materials used in squeegee making.
e. Write any four textile printing examples.
f. State working principle of capillary film.
g. Draw schematic diagram of manual screen printing unit.

Q2 Answer the following questions. (Any 3) **12**

a. Compare screen with offset printing process (upto 2 points).
b. State four technical specification of mesh fabric.
c. Write advantages of computer to screen method.
d. List any two printing problems created by squeegee.
e. Describe any two application areas of screen printing.

Q3 Answer the following questions. (Any 3) **12**

a. Write four advantages of screen printing process.
b. List two required qualities of screen frame.
c. Describe procedure of mesh stretching.
d. Explain effects of pressure and angle of squeegee on inking.

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

a. State four factors governing selection of mesh.
b. Write requirements of film used in stencil making.
c. Differentiate flatbed and rotary screen printing (upto 2 points).
d. Explain packaging related application of screen printing.

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

a. Write four limitations of screen printing.
b. State different profiles of squeegee along with use.
c. Describe procedure of mesh coating with emulsion.
d. Elaborate importance of off-contact and squeegee speed on inking.

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

a. List four factors governing frames for screen printing.
b. Write stages in screen stencil making using capillary film.
c. State four required press-room conditions for screen printing.
d. State two reasons each behind using screen printing to make printed circuits and solar panel.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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. Name any two finishing treatments done on paper during manufacturing.
b. Define the term grammage. State its unit.
c. Define opacity of paper.
d. Mention any 2 natural and 2 synthetic textile fibers used in printing industry.
e. What is the need for sustainability when dealing with polymer material?
f. State any two ink drying methods.
g. State two application area of speciality inks along with the ink used for the application.

Q2 Answer the following questions. (Any 3) **12**

a. Explain the structure of cellulose fiber with suitable diagram.
b. State any 4 physical properties of paper.
c. State any 4 treatments done on textile printing substrate.
d. Explain film extrusion process with suitable diagram.
e. Explain the process of 'radiation drying method'

Q3 Answer the following questions. (Any 3) **12**

a. Explain any 1 method of pulping used in paper manufacturing.
b. Elaborate the following terms i) bursting strength ii) tearing resistance.
c. Differentiate between natural and synthetic textile printing substrates (4 points).
d. State any 4 polymer substrate used with its application area.
e. Elaborate the following terms for ink : (i) tack, (ii) density.

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

a. Differentiate between board and paper (upto 4 points)
b. What is cobb value? How does it determine the quality of paper?
c. State 4 properties of textile substrates.
d. Explain the polymer recycling process.
e. Elaborate on 2 properties of any 2 ingredients used in ink manufacturing.

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

1. State the stages of paper manufacturing process state the dimension of A0 type paper.
2. Explain the terms machine direction and cross direction with diagram.
3. What steps are taken to enhance printability on polymer films.
4. State the formulation used in offset printing inks.

Q6 Answer the following questions. (Any 2) **12**

a. Explain any two optical properties of paper.
b. What is polyester? State its advantages and advantages.
c. Explain the various developments in biodegradable.polymer substrates.
d. State 2 properties and basic formulation of screen printing.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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. Define imposition.
b. List 2 applications of waterless printing process.
c. State 2 functions of dampening unit.
d. Write unit of conductivity.
e. Draw a diagram of Y type printing unit.
f. List 2 advantages of UV dryer.
g. Write 2 applications of AI in offset printing process.

Q2 Answer the following questions. (Any 3) **12**

a. State 4 purposes of imposition.
b. Compare offset printing process with gravure printing process up to 4 points.
c. Describe functions of any 2 working components of feeding unit.
d. Explain construction & working of inline printing machine.
e. State 2 causes & 2 remedies for plate blinding and setoff.

Q3 Answer the following questions. (Any 3) **12**

a. Compare full sheet work & half-sheet work imposition up to 4 points.
b. Describe construction & working of feeding unit of offset printing process.
c. Explain construction & working of stream feeding unit.
d. Elaborate locations of reel stands along with diagrams.
e. Give 2 causes & 2 remedies for out of round rolls and telescopic rolls.

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

a. Describe construction & working of CTP machine.
b. Compare sheetfed & webfed offset printing machine up to 4 points.
c. Explain composition of dampening solution along with function.
d. Describe working of dancer roll.
e. Describe function of compensator roller with diagram.

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

a. State 4 advantages of waterless plates.
b. List 2 advantages and 4 applications of webfed offset printing machine.
c. State 4 required properties for inking forme - roller.
d. Explain working of flying speed splicer.

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

a. Describe the stages involved in waterless plate making process.
b. List 4 needs of using sustainable materials in offset printing industry.
c. Explain properties of blanket materials.
d. Describe construction & working of chopper folder.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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. List 2 printing process used for printed electronics.
b. List 2 substrates used for printed electronics.
c. State 2 application areas of printed electronics.
d. Describe the terms sustainability.
e. State 2 applications of rotary screen printing.
f. List 2 inorganic materials used for printed electronics.
g. State 2 future trends in printed electronics.

Q2 Answer the following questions. (Any 3) **12**

a. State 2 characteristics each of printed electronics & conventional electronics.
b. Write 4 advantages of printed electronics product.
c. Describe storage conditions related to printed electronics.
d. Explain how ink-jet printing is used for printed electronics.
e. Explain interactive packaging.

Q3 Answer the following questions. (Any 3) **12**

a. Describe the potential of printed electronics.
b. Describe any 2 manufacturing challenges related to printed electronics.
c. Explain sustainability related to printed electronics.
d. Describe any one configuration of flexo press.
e. State 2 properties each of organic & inorganic materials.

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

a. Describe development of printed electronics.
b. State 2 benefits of roll to roll printing.
c. Describe 2 electronic properties of ink for printed electronics.
d. Describe 2 gravure printing consideration.
e. Describe direct write extrusion process.

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

a. State 4 factors to be considered for printed electronics.
b. Describe any 2 material challenges related to printed electronics.
c. Describe 2 physical properties of substrate for printed electronics.
d. Describe 2 screen printing consideration for printed electronics.

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

a. Describe any 2 troubles related to printed electronics.
b. Describe any 2 test related to printed electronics.
c. Describe any 2 flexo print product & list 2 advantages of flexo printing.
d. Explain aerosol printing process for printed electronics.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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

Q1. Answer the following questions. (Any 5) **10**

a. Which roller in flexography has cells engraved on it? Name any one material used to make this roller.
b. Name 2 finishing operations performed inline.
c. Write 2 product which require finishing.
d. Write names of 2 flexo ink manufacturing companies.
e. Write names of 2 flexo plate manufacturing companies.
f. State 2 applications of printed electronic by flexo.
g. State the meaning of sustainability.

Q2 Answer the following questions. (Any 3) **12**

a. Describe the working principle of flexo printing.
b. Describe any 2 properties of flexo image carrier.
c. Explain the meaning of hybrid printing machine.
d. Describe the construction of printing unit of flexo machine.
e. Explain construction & application of in in-mold label.

Q3 Answer the following questions. (Any 3) **12**

a. Describe the function of doctor blade, with diagram.
b. Explain any 2 factors considered to calculate shrinkage allowance.
c. Draw schematic diagram of CIC type flexo machine having 4 printing units.
d. Draw schematic diagram showing cross section of anilox roller.
e. Describe troubles associated with plate mounting.

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

a. Write names of 4 companies manufacturing flexo printing machines.
b. Describe any one method of flexo plate making.
c. Write 4 points about stack type flexo machine.
d. Describe channel doctor blade inking system.
e. Explain the meaning of Extended Color Gamut.

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

a. Compare flexography with offset printing (4 points)
b. Write 4 points about inline type flexo machine.
c. Describe 2 doctor blade specifications.
d. State general formulations of flexo ink.

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

a. State 2 advantages and 2 limitations of flexo process.
b. Write names of 4 substrate printed using flexo.
c. Draw schematic diagram of processed flexo plate.
d. Describe 2 end use requirements of flexo printed products.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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

Q1. Answer the following questions. (Any 5) **10**

a. Write working principle of chemical etching.
b. Compare gravure cylinder with offset plate.
c. Write working principle of electronic engraving.
d. List any four materials used to make doctor blade.
e. Write any four features of gravure solvent based ink.
f. Name any 4 absorbent and 4 non absorbent substrates.
g. Write two advantages of using servo motor.

Q2 Answer the following questions. (Any 3) **12**

a. Draw labeled diagram of electroplating unit.
b. State stages in gravure cylinder proofing.
c. Write 4 required qualities of impression roller covering.
d. Describe any one surface treatment technique.
e. Write any four advantages of ELS drive.

Q3 Answer the following questions. (Any 3) **12**

a. Write any four properties of copper metal.
b. Describe any four variables of electroplating.
c. Define static and dynamic balance.
d. Write function of any four ingredient of gravure ink.
e. Write working principle and advantages of servo motor.

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

a. Describe stages of reclaiming electroplating layer.
b. Draw diagram of different geometrical shapes of cell.
c. With diagram describe working of web turner.
d. List end use requirements of gravure ink and describe one.

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

a. Describe any two application areas of gravure printing.
b. Write working principle of laser engraving and list 2 advantages.
c. Describe any four properties of doctor blade material.
d. Define printability and runnability from gravure printing perspective.

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

a. Compare gravure printing with flexography up to 4 points.
b. Name lasers used to engrave cylinder. Also write 2 qualities of laser used in copper engraving.
c. What is ESA? Write its working , in gravure printing.
d. Describe working of any one type of ink drying mechanism.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

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

Q1. Answer the following questions. (Any 5) **10**

a. State 2 primary and 2 secondary functions of packaging.
b. State the flute dimensions of A & C type flutes.
c. What does FEFCO and ECMA stand for ?
d. Draw a neat diagram of 2 piece can structure.
e. State 2 advantages of glass packaging material.
f. Write full form of MAP and CAP.
g. Mention any 2 tests done on rigid packaging.

Q2 Answer the following questions. (Any 3) **12**

a. Explain classification of packaging elaborate with appropriate examples.
b. Draw keyline for RTE box of 5cm X 4cm X 6cm. Write 2 applications of it.
c. Explain in detail the construction of aerosol containers.
d. Explain in detail the process of annealing in glass manufacturing.
e. What is packaging life cycle? Support your answer with a diagram.

Q3 Answer the following questions. (Any 3) **12**

a. Explain details any 4 challenges faced during packaging.
b. Write 4 functions of FEFCO & ECMA each.
c. Elaborate 3 piece metal can manufacuturing.
d. Elaborate on the properties of any 2 types of glass bottles. Also state its application area.
e. With a neat diagram, explain stack test.

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

a. List any 4 packaging materials and state its application area.
b. Explain universal box making process.
c. State 4 advantages and 4 disadvantages of metals used in packaging.
d. With a flow chart explain the different stages involved in glass manufacturing.
e. Elaborate on 4 factors influencing the cost of packaging.

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

a. Write 4 advantages of corrugated board. Draw 5 ply structure.
b. Write 4 properties of Aluminum foil. Write its 4 applications.
c. Explain any 2 after treatments given to glass.
d. Elaborate CAP list its 2 advantages & 2 application.

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

a. Write short note on software used for carton designing.
b. Explain the process of metal tube manufacturing.
c. Write raw materials used for glass manufacturing. List 4 different type of glass.
d. Write Packaging material for the following.
   i) Milk ii) Cold drink iii) Cheese iv) Mangoes.

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

Course: Supply Chain Managment 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

Q1. Answer the following questions. (Any 5) **10**

a. Define supply chain management.
b. Name 4 components of supply chain management.
c. Define inventory and its 2 types.
d. Write 4 advantages of rail transpotation.
e. Differentiate direct and indirect distribution channels.
f. State advantages of supply chain analytic.
g. Define six sigma and state its 2 advantages.

Q2 Answer the following questions. (Any 3) **12**

a. State 4 applications of SCM in printing industry.
b. Describe 2 functions of ERP software.
c. State formula to calculate EOQ. State 2 advantages of EOQ.
d. Explain supply chain cycle time.
e. Describe application of AI in supply chain.

Q3 Answer the following questions. (Any 3) **12**

a. Write stages in production planning.
b. Write any four features of SAP.
c. What is WIP? List 4 example of WIP.
d. Explain order fulfillment workflow with example.
e. Write 4 advantages of six sigma process.

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

a. Describe procurement component of SCM.
b. Define cost control and describe one method of cost control.
c. Write 4 objectives of storage layout.
d. What is supplier performance? How is it measured.

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

a. Describe 2 applications each of Robotics and drone in SCM.
b. List 4 reasons for variability in sourcing quality material.
c. Write 2 advantages each of FIFO and LIFO stock rotation
d. Differentiate up to 4 points - Logistics and distribution..

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

a. What is carbon footprint ? list carbon footprint of 2 printing process.
b. Describe stages in logistics planning.
c. Write 2 advantages each of direct and indirect distribution channels.
d. Write any 4 guidelines of forest stewardship council (FSC).

Government Institute of Printing Technology, Mumbai

Even term end theory examination April / May 2025

Course: Environmental Education & 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

Q1. Answer the following questions. (Any 5) **10**

a. What is the importance of natural resources in sustainable development?
b. Differentiate between renewable and non-renewable resources.
c. Define ecosystem and mention its types.
d. Define pollution and its types.
e. Why is soil conversation important?
f. What are the constitutional provisions for environmental protection in India?
g. How does public participation help in implementing environmental laws?

Q2 Answer the following questions. (Any 3) **12**

a. i) Define the environment and its components ii) what are the major environmental issue caused by population growth?
b. Explain the impact of over exploitation of natural resources on the environment.
c. Describe the biodiversity assessment initiatives in India.
d. Explain the causes, effect and preventive measures of water pollution.
e. Explain the role of information technology in environmental protection.

Q3 Answer the following questions. (Any 3) **12**

a. Explain the concept of 5R with example.
b. Discuss the various forms of renewable energy and their advantages.
c. Explain the importance of biodiversity in environmental sustainability.
d. Discuss the significance of air pollution control in maintaining ambient quality norms.
e. Discuss the application of green technologies like solar desalination and electric vehicles.

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

a. How does climate change impact sustainable development?
b. What are the different types of green energy solutions?
c. Explain SWOT analysis of biodiversity hot spot in India.
d. How can noise pollution generated and how it affect human health?
e. Explain E- waste generation problems occurred by E vehicles.

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

a. Discuss the relevance of a zero carbon footprint for sustainability.
b. Explain how the optimum use of natural resources contributes to sustainability.
c. What are the roles and responsibilities of the Central and State Pollution Control Boards?
d. How do NGO's contribute to environmental awareness and sustainability?

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

a. What are Sustainable Development Goals (SDGs), and how do they help manage climate change?
b. Compare Traditional and Green Energy Solutions.
c. Why is it necessary to conserve biodiversity? Explain with examples.
d. What is CPCB and what are norms for ambient air quality for residential area.
