

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

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 types of communication techniques.
- c. Write four prepress stages.
- d. Mention any two types of binding styles.
- e. Write two basic characteristics of image carrier.
- f. Write principle of offset printing.
- g. Write two advantages of print media.

Q2 Answer the following questions. (Any 3)

12.

- a. Describe any two finishing operations.
- b. Draw labelled diagram of single color offset unit.
- c. Classify image carrier, mention each with related printing process.
- d. Describe RIP process briefly.
- e. Differentiate print media and non-print media up to four points.

Q3 Answer the following questions. (Any 3).

12

- a. Differentiate conventional and digital printing up to four points.
- b. Describe equipment used in gravure cylinder preparation.
- c. Write consumable and equipment used to prepare image carrier for offset.
- d. Explain the working principle of gravure printing.
- e. Write four main ingredient of printing ink.

Q4 Answer the following questions. (Any 3)

12

- a. Explain any two image carriers for conventional printing processes.
- b. State four basic materials required in binding department.
- c. Differentiate between offset and gravure printing machine.
- d. Write names of two types of originals and describe them briefly.

Q5 Answer the following questions. (Any 3)

12

- a. Explain additive and subtractive theory (upto 2 points each)
- b. Write two types of scanners and describe their functions briefly.
- c. Differentiate between image carrier used for offset printing & flexography printing.
- d. Write common configurations of offset printing machine and describe them briefly.

Q6 Answer the following questions. (Any 3)

12

- a. Explain GSM, Ream, Gross and Grain direction; related to paper.
 - b. Differentiate between sheetfed and webfed offset machine (up to 4 points)
 - c. Explain the classification of image carrier.
 - d. Differentiate between CTP and image setter.
 - e. Write four different applications of printing industry.
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Government Institute of Printing Technology, Mumbai

Even term and theory examination April - May 2024

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. Rate of perfect binding of a book is Rs.25000 for 5000 books. By same proportion, find the cost of perfect binding of 25000 books.
- b. Average speed of a marathon runner is 9 kmph. How much km distance will he cover in 360 minutes?
- c. Find the simple interest for the loan amount required to purchase a ctp machine. Rate of interest = 15% per year, time = 5 years, capital = Rs.12,00,000/-
- d. Write the formula to calculate compound interest.
- e. Write the formula and unit to calculate volume of a cube.
- f. State one example of Simpson's rule.
- g. Find the mean of number of misregistered copies in a printing press per shift: 127, 22,18, 24, 20

Q2 Answer the following questions. (Any 3)

12.

- a. Sewing of 44000 books is to be done. These books are distributed on 3 sewing machines in the proportion 2:3:6. Find out number of copies sewn by each machine. (first, second and third)
- b. Rate of flexo plate making is Rs.4 per sq.cm. Find out the cost to make 4 plates. The size of each plate is 210 cm X 297 cm.
- c. Cost of magazine layout design is Rs.90 per A4 size page. 192 designs of A4 size are prepared. 25% profit is added. Find total cost.

- d. Draw a bar graph using following data

Machine	Android	Mac	Linux	HMT
No of defects	47	79	32	55

- e. Describe with 2 examples, how graphs are useful to interpret the data.

Q3 Answer the following questions. (Any 3).

12

- a. A bullet train covers 120 km in one hour without stopping. It covers 100 km in same time if it stops for some minutes. Find how many minutes it stops.
- b. Compare simple interest and compound interest for capital = Rs 1000, rate = 10% per year, period = 10 years.
- c. 100 reams of A4 size paper were purchased at Rs.225 per ream and sold with a loss of 5%. find the amount of loss.
- d. Describe 'range' with two examples.
- e. Explain the two applications of pie chart with diagram.

Q4 Answer the following questions. (Any 3)

12

- a. Amount of simple interest = Rs.5000, Amount = Rs 10,00,000, Time = 2 years. Find the rate per year.
- b. Find the surface area of blanket cylinder. Radius = 21cm, length = 63 cm.
- c. Explain depreciation and two methods to calculate it.
- d. Find the mode of the following data.

Class interval	15-30	30-45	45-60	60-75	75-90
Frequency	7	8	9	10	10

Q5 Answer the following questions. (Any 3)

12

- a. HMT machines can print a job in 6 hours, KBA in 4 hours. If these machines work together, how much time is required to complete a job?
- b. A paper has a thickness (caliper) of 0.5 mm. How many papers can be stacked one above the other in box having height 25 cm?
- c. Rate of printing is Rs.110 for 1000 impressions of single color. Find cost of printing 5000 four color posters.
- d. Explain variance and coefficient of variance with one example.

Q6 Answer the following questions. (Any 3)

12

- a. Find compound interest at 8.35% for 8 years for Rs 80,000.
- b. Two reams of paper were purchased at Rs.375 per ream. It was varnish coated at the rate of Rs.0.50 per paper. These coated papers were sold with 25% profit. Find the total cost.
- c. Find the mean of 212.17, 112.27, 221.71, 127.21, 271.12.
- d. Draw a line graph.

Exposing time (min)	5	7	10	12	15
Processing time(min)	5	7	9	13	17

- e. Convert the following fractions in percentage
 - 1. 0.25
 - 2. 4.4
 - 3. 0.77
 - 4. 1.23
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

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 two examples of it.
 - b. State four system of unit.
 - c. Define velocity, write it unit.
 - d. Define 'Arrhenius acid', write two examples of it.
 - e. Define 'Ionization'.
 - f. Define electrode, write example of it.
- Q2 Answer the following questions. (Any 3) 12.**
- a. Write any four requirements of standard unit.
 - b. Define energy. State laws of conservation of energy.
 - c. State four properties of LASER.
 - d. Differentiate between strong acid and weak acid.
 - e. State and explain Faraday's second low of electrolysis.
- Q3 Answer the following questions. (Any 3). 12**
- a. Write comparisons between accuracy and precision (four point).
 - b. Define 'reflection' of light, write laws of it.
 - c. Define and explain viscosity with suitable diagram.
 - d. Differentiate between centripetal and centrifugal force.
 - e. Explain electrolysis of aqueous solution of copper sulphate (CuSO_4). By using copper electrode with suitable labelled diagram and schematic representation.
- Q4 Answer the following questions. (Any 3) 12**
- a. Define 'error'. Write the types of error in the measurement process.
 - b. State and derive Newton's second law of motion ($F=ma$)
 - c. State and explain Snell's law of refraction.
 - d. Explain capillary action (capillarity) in water and mercury liquid.
 - e. Differentiate between atom & ion (four points).
- Q5 Answer the following questions. (Any 3) 12**
- a. Write a list of formulae for estimation of error (four)
 - b. Define and write SI units of i) Work ii) Force
 - c. State the limitations of concept of Arrhenius acid and base.
 - d. A current of 4 ampere is passed through copper sulphate solution for one hour. Calculate the weight of copper deposited at cathode. (Given E.C.E of copper= 0.000326 gm)
- Q6 Answer the following questions. (Any 3) 12**
- a. Differentiate between fundamental quantity and derived quantity.
 - b. Define and explain polarization of light with suitable diagram.
 - c. Define i) p^H ii) p^{OH}
 - d. Describe the silver plating process on iron spoon with suitable, labelled diagram and schematic representation.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

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. Define 'original' and state two example.
 - b. List two primary colors each of additive and subtractive color theory.
 - c. Write full form of i) CCD ii) CMOS.
 - d. List two graphic software used in printing.
 - e. Define color gamut. State two examples.
 - f. Write names of two instruments used to measure optical density of ink.
 - g. Write formula to calculate the color difference. (Delta E).
- Q2 Answer the following questions. (Any 3) 12.**
- a. Define i) light ii) color
 - b. Describe working of flatbed scanner.
 - c. Explain the purpose of preflight.
 - d. Describe the meaning of a and b in CIE lab color model.
 - e. State screen angles for CMYK in offset printing.
- Q3 Answer the following questions. (Any 3). 12**
- a. Describe the applications of colorimeter.
 - b. Describe pantone color specification system.
 - c. Describe any two dot shapes.
 - d. Define color temperature. State its unit.
- Q4 Answer the following questions. (Any 3) 12**
- a. Describe any two attributes of color.
 - b. Differentiate between AM and FM upto 4 points.
 - c. Describe the meaning of i) additive failure ii) proportionality failure.
 - d. Write four technical points about ICC.
 - e. Write the formula to calculate color difference (Delta E).
- Q5 Answer the following questions. (Any 3) 12**
- a. State four technical specification of spectrophotometer.
 - b. Explain the meaning and purpose of i) UCR ii) GCR.
 - c. What is moire detect? State its causes and remedies.
 - d. Describe i) Line spectrum ii) Continuous spectrum. Draw diagram.
- Q6 Answer the following questions. (Any 3) 12**
- a. Describe i) Metamerism ii) Adaptation.
 - b. Describe working principle of any one image capturing element.
 - c. Write two characteristics each i) raster ii) vector
 - d. What is meant by ink trapping? State its formula.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

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. Name three materials used for making screen frames.
 - c. What is mesh count and its unit of measurement?
 - d. Name the types of stencils making method.
 - e. Write two names of screen printing machine manufacturers.
 - f. Write the types of machine configuration based on screen and type of substrate.
 - g. What is graphics while the purpose of using graphic.
- Q2 Answer the following questions. (Any 3) 12.**
- a. Write four applications of screen printing in various fields.
 - b. Write the difference between rubber squeegee and polyurethane squeegees (up to 2 points)
 - c. What are the steps involved in quality control for preparing screen?
 - d. Write the factors governing to choose correct ink type in screen printing.
 - e. What is RFID? how it is helpful in modern packaging?
- Q3 Answer the following questions. (Any 3). 12**
- a. Write the advantages of photo emulsion against manual stencil.
 - b. Why polyurethane squeegees are better than rubber squeegees?
 - c. Write the steps to prepare the screen for printing, briefly.
 - d. Write the advantages and disadvantages of rotary screen printing machine.
 - e. Write the applications of barcode printed on packaging using screen printing.
- Q4 Answer the following questions. (Any 3) 12**
- a. Write the advantages of using synthetic mesh over natural silk.
 - b. Write the difference between wooden screen frame and metal screen frame.
 - c. What is tension meter Write its importance.
 - d. Write two limitations of screen printing for producing graphics.
 - e. What are the press parameters of screen printing? State any four.
- Q5 Answer the following questions. (Any 3) 12**
- a. Write briefly about key inventions in screen printing process.
 - b. Explain the importance of hardness for squeegees in screen printing process.
 - c. What is ghosting? How it can be prevented?
 - d. Write the purpose of packaging in detail. (4 points)
- Q6 Answer the following questions. (Any 3) 12**
- a. Explain the factors governing the selection of screen mesh. Any 2 factors.
 - b. Write the importance of exposure for getting sharp image on the screen.
 - c. What are the requirements of press room environment? Write briefly.
 - d. Explain briefly the process of emulsion coating.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April- May 2024

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 5)

10

- a. i) Over _____ ii) _____ violet (Add Prefix and Suffix).
- b. Destroy (write any two synonyms of the given word)
- c. Afraid (write any two antonyms of the given word)
- d. _____ coat is made of _____ wool. (Rewrite the sentences with use articles)
- e. He pulled a letter _____ the bag and handed it _____ her. (Rewrite the sentences use prepositions).
- f. _____ drinks _____ food allowed in this room. (Rewrite the sentences use conjunction).
- g. Hari said to me, "I have been reading for four hours". (Change in to indirect speech).

Q2 Answer the following questions. (Any 3)

12.

- a. State the importance of achieving financial freedom as one of the most important goals in life.
- b. Explain the importance of teamwork as considered mandatory in organizations.
- c. Mention the things done by Arunima Sinha once she reached summit of Mount Everest.
- d. Explain the importance of mindset in achieving success.

Q3 Answer the following questions. (Any 3).

12

- a. Write a technical description of hard disk drive.
- b. Write a technical description of vacuum cleaner.
- c. Write a paragraph on – "Each one must plant one tree"
- d. Write a paragraph on - "Wi-Fi Technology".

Q4 Answer the following questions. (Any 3)

12

- a. Make a sentence using following collocations
i) Have a break ii) Make a promise iii) Do harm iv) Do research.
- b. Make two sentences using the given homophones i) Flour, Flower ii) Pear, Pair
- c. Write the meaning of following idioms and make a sentence of your own. i) Get a way ii) By and by
- d. Change the voice
i). The fire damaged the building.
ii). We offered her a chair.
iii). I shall explain this later.
iv). They were questioning the thief.

Q5 Answer the following questions. (Any 2)

12

- a. Develop a dialogue between a doctor and a patient.
- b. Develop a dialogue between two friends at a library.
- c. Write a diary entry – 'When I helped a needy'.
- d. Write a speech emphasizing the importance of sports and physical exercises.

p.t.o

Q6 Read the following passage and answer the given questions.

08

Machines were made to be man's servant, yet he has grown so dependent on them that they are in a fair way to become his masters and machines are very stern masters. They must be fed with coal and given petrol to drink and oil to wash with, and they must be kept at the right temperature. If they do not get their meals when they expect, they get sulky and refuse to work or burst with rage and blow up and spread ruin and destruction all around them. So we have to wait upon them attentively, and do all that we can to keep them in good temper. Already we find it difficult either to work or play without machines and a time may come when they will rule us altogether just as we rule the animals. Machines save time and energy for us but we use them for making more and better machines. We must remember that machine themselves or the power that machines have given us are not civilization but aids to civilization. Real civilization will come only when we learn to use these machines as instrument in the services of humanity at large and prevent them from being a means of luxury and power for a few.

a. Questions-

- i). How are we required to look after machines?
- ii). What happens when machines are neglected?
- iii). When do machines become a curse to mankind?
- iv). When can we have real civilization?

b. Attempt any two of the following

04

- a. Explain the term 'gesture' as a form of nonverbal communication.
 - b. Mention any four example of body language.
 - c. State the importance of posture in face-to-face communication.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: English

Code: M101

Duration: 03.00 Hours

Marks:80

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.A Do as directed (Any ten)

10

- a. He studies carefully. (Add a question tag)
- b. Socrates was the wisest man in Athens. (Change the degree)
- c. She was lazy (Make it exclamatory).
- d. Gavaskar scored thirty centuries (Frame a 'wh' question to get the underlined answer)
- e. How amazing it is! (Make it assertive).
- f. She painted a beautiful picture. (Change the voice)
- g. It will be inadequate. (Make it negative)
- h. That is very broad and multidimensional (Use not only----- but also)
- i. It lived with that diagnosis. (Change it into past perfect tense).
- j. Payal could just ring her in laws. (Rewrite using 'be able to')
- k. She did not find anyone misbehaving. (Rewrite as an affirmative sentence).
- l. You stop smoking you'll be seriously ill (Use If ----- unless)

Q1.B Fill in the blank, with suitable articles (Any four)

04

- a. Laughter is _____ best medicine.
- b. _____ little knowledge of English is useful.
- c. Give me _____ one rupee coin.
- d. He needs _____ hour to complete his work.
- e. He set _____ example before others.
- f. Don't make _____ noise, please.

Q1. C Fill in the blank, with following pronouns (Who, Whose, Which, that, What) Any four

04

- a. I know the woman _____ child was hurt.
- b. The movie _____ we watched last night was fantastic.
- c. _____ can I do for you?
- d. She is the doctor _____ treated my mother.
- e. This is the book _____ I was looking for.

Q2. A Correct the following sentence (Any 4)

04

- a. Whose did you punish?
- b. One should take care of his health.
- c. Let you and I go there.
- d. She is the wisest of the two.
- e. This pen is my.
- f. Ravi is the most best boy in the class.

Q2. B Add suffix and Prefix in the following words (Any Six)

06

- a. Thank _____
- b. Refresh _____
- c. Care _____

- d. Quick _____
- e. Kind _____
- f. Fear _____
- g. _____graphy.
- h. _____logical.
- i. _____able
- j. _____honest.
- k. _____judge.
- l. _____behave.

Q2.C Fill in the blanks with proper prepositions (Any Four)

04

- a. Costly furniture is made _____ wood.
- b. This white car belongs _____ me.
- c. The soldier fought _____ courage.
- d. Keats is well known _____ his love poetry.
- e. His disease is _____ cure.
- f. Yesudas excels _____ singing.

Q3 Use the following phrases in your own sentences (Any seven).

14

- a. Bread and butter
- b. Come true.
- c. Child's play
- d. Eye opener
- e. In full swing.
- f. In a nutshell.
- g. Heart and soul.
- h. Get rid of.
- i. Hard times.
- j. Keep an eye.

Q4A. Do as directed. (Any four)

04

- a. He takes tea when the sun rises. (Make it simple)
- b. The teacher punished the boy for disobedience (Make it compound)
- c. I have no money that I can give you (Make it simple)
- d. He confessed that he was a criminal (Change into simple by replacing noun clause)
- e. The boys who are blind are helpless. (Change into simple by replacing adjective clause)

Q4B. Write a short imaginary conversation between the Principal and the student about their syllabus completion.

04

Q4C. Write a letter to your younger brother advising him to work hard and not to neglect his studies.

08

Q5A. Read the passage carefully and answer the question given below

12

The story of Egypt is the story of a river. Without the Nile, Egypt would be a desert from end to end. This river with its network of irrigation has kept the desert at bay and given Egypt the fertile area of the Nile valley and the Delta of Lower Egypt. Almost all her riches spring from the land which is cultivated by about ten million peasants in much the same way and with the same implements as were used by the ancient Egyptians. Each year, the river risks and spreads its water over the great area of parched land. In winter the floods begin to go down and until modern times there was always the danger of drought until the next season's rains. Modern engineering is solving the problem by holding back the surplus flood water by means of great dam at Aswan, several hundred miles up the Nile.

Questions:-

- f. How has the Nile kept the desert at bay?
- g. What would happen without the Nile?

- h. How is the modern engineering solving the problem of drought?
- i. How is the river a blessing to the farmers?
- j. Explain how rivers lead a nation to prosperity.
- k. Write a suitable title for the passage.

Q5B Write summary of the above passage

06

Government Institute of Printing Technology, Mumbai

Even term end theory examination April- May 2024

Course: Communication Skill

Code: M102

Duration: 03.00 Hours

Marks:80

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)

20

- a. What is pie diagram map? Illustrate it.
- b. What are the principles of impressive communication?
- c. What is a writing style? Write in short, its type.
- d. How do you write a project report?
- e. How do you write a single paragraph?
- f. Summary writing means what? What are the rules for summery writing?
- g. Write down some steps of essay writing.

Q2 Write an essay in about 250 words. (Any 1)

12.

- a. Essence of electronic Media.
- b. Role of youth.
- c. If I were the Prime Minister of India.....

Q3 Answer the following questions. (Any 2).

12

- a. While operating the printing machine, a trainee student caused a serious problem. As a supervisor of the printing press, draft a suitable report for submission to the head of your institute.
- b. As the principal of your institute, draft a notice to inform the first year students about an industrial visit arranged by the college.
- c. You are the manager of the production departments of the ABP company. In the past three months the productivity of the employee has remained stagnant and upcoming season will require increased production of goods. Write a memorandum to the manger of Human Resources recommending a bonus plan to encourage employees and suggest other ways of increasing productivity.

Q4A Answer the following questions.

06

- a. Write a letter of application along with a resume to the SEM paints industry, Nagpur 440002 for the post of Assistant Manager.

Or

- b. You want to purchase some electrical equipment for your workshop. Write a letter of inquiry to Bharat electrical Appliances Co. Ltd, Mumbai 04.

B What is good writing? What are the five qualities of good writing?

06

p.t.o

Q5 Read the following extract carefully and answer the question?

08

Scientific innovation or technology is the most amazing thing that has ever happened to human kind. In this modern world technology is no more a luxury, it has become a necessity. Life without technology is next to impossible since humans have become dependent on technological advancements. For every human activity, we need a machine and then there comes technology. It has made all our lives easier and more confinement be and has also made transportation, education, labour, etc. more accessible. Technological breakthroughs change from time to time in today's fast paced, ever changing world. However, in today's world, technology plays a critical role in strengthening country's economy and people's lives.

Questions

- a. What is the role of technology in the modern era?
- b. Why does technology play a critical role in today's world?
- c. Which areas have become more accessible?
- d. What is the essence for human activity?
- e. Write summary of the above extract and suggest a suitable title.

04

Q6 Answer the following questions.

08

- a. Imagine you are preparing for an elocution competition and you wish to speak on the topic –'Green Revolution'. Draft a speech in about 150 words on the given topic.

OR

As the in charge of the cultural committee of your institute for the annual social gathering, prepare a vote of thanks for the event.

- b. **Write a short note on**

04

1. Android cell phone
 2. Social media
-

Government Institute of Printing Technology, Mumbai

Even term and theory examination April - May 2024

Course: Basic Science

Code: M103

Duration: 03.00 Hours

Marks:80

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) 20**
- a. Write any four applications of LASER.
 - b. Define i) refraction ii) reflection.
 - c. Define i) cohesive force ii) adhesive force.
 - d. Define strong acid, write two examples of it.
 - e. Define strong base, write two examples of it.
 - f. Define electrode, write types of electrodes.
 - g. Define weak electrolyte, write two examples of it.
- Q2 Answer the following questions. (Any 2) 12.**
- a. Define unit. Write any 4 characteristics of standard unit.
 - b. Differentiate between centrifugal force and centripetal force.
 - c. State and explain "Snell's law of refraction" with suitable, neat & labelled diagram.
- Q3 Answer the following questions. (Any 2). 12**
- a. Differentiate between fundamental and derived quantities.
 - b. State and explain Newton's second law of motion with derivation of $F=ma$.
 - c. Define and explain "angle of contact" with suitable examples and diagram.
- Q4 Answer the following questions. (Any 2) 12**
- a. Define 'error' in measurements. And write types of error.
 - b. Define i) velocity ii) speed iii) motion.
 - c. State signature of angle of contact and explain rise of liquid in capillary tube.
- Q5 Answer the following questions. (Any 2) 12**
- a. Define 'energy', write its unit and state laws of conservation of energy.
 - b. Define Arrhenius concept of acid and base. Explain limitations of Arrhenius theory.
 - c. State and explain Faraday's first law of electrolysis with diagram and schematic representation.
- Q6 Answer the following questions. (Any 3) 12**
- a. State four characteristics of LASER.
 - b. Define viscosity. State Newton's law of viscosity.
 - c. Define and explain pH scale with suitable diagram.
 - d. Define Lewis acid & Lewis base.
 - e. Define electroplating. State purpose of electroplating.
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Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Basic Engineering

Code: M104

Duration: 03.00 Hours

Marks:80

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) 20**
- a. Define power transmission and list 4 mechanical drives.
 - b. Describe mechanical advantage with suitable example.
 - c. State Boyle's law and write its application.
 - d. State Charle's law and write its application.
 - e. State formulae for electrical work, power, energy & voltage.
 - f. Differentiate up to 4 points – conductor & insulator.
 - g. State Kirchhoff's current law with suitable example.
- Q2 Answer the following questions. (Any 2) 12.**
- a. Explain group drive & individual drive.
 - b. State 3 laws of static & dynamic friction.
 - c. Draw schematic of general hydraulic powering mechanism.
- Q3 Answer the following questions. (Any 2). 12**
- a. Explain helical & spur gear.
 - b. Describe classification of lubricant.
 - c. Write drawbacks of centralized & decentralized compressed air systems.
- Q4 Answer the following questions. (Any 2) 12**
- a. Draw schematic of any 2 cams & 2 followers.
 - b. What is coefficient of static friction? State its importance.
 - c. Describe Ohm's law related to electrical quantities.
- Q5 Answer the following questions. (Any 2) 12**
- a. Differentiate belt drive from gear drive.
 - b. Draw schematic diagram of rotary & double acting compressor.
 - c. State voltage and current formula in star & delta circuits.
- Q6 Answer the following questions. (Any 2) 12**
- a. Draw spur gear profile to show pitch, addendum, dedendum, pitch circle.
 - b. Describe applications of compressor in printing.
 - c. Compare DC series with DC parallel circuit.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Printer's Mathematics

Code: M106

Duration: 03.00 Hours

Marks:80

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)

20

- a. Find the mean – 11.7, 12.7, 21.7, 17.1, 12.3.
- b. Describe the formula to calculate simple interest.
- c. Find mode and media - 63, 69, 67, 62, 63, 65, 63, 62, 69, 64
- d. Find the volume of cylinder of radius 7cm and height 14cm.
- e. Cost of one note book is Rs.42. Find selling price of 42 notebooks with 42% profit.
- f. A train is moving at a speed of 81 kmph. Find out the distance covered by it in 330 minutes.
- g. Find the volume of 17 cubes of size 8.5 cm.

Q2 Answer the following questions. (Any 3)

12.

- a. Divide Rs.51000 among A, B, C, D in the ratio 5:3:4:5. How much 'C' will get?
- b. Find simple interest on Rs.124000 for 2 years at rate 12.4% per year.
- c. Cost of perfect binding of one book is Rs.5. Find the selling price of perfect binding 5000 books with profit 15%.
- d. A spherical pot of radius 7cm is half filled with water. Find the volume of empty part.
- e. Find the mean

Height (cm)	150	155	160	165	170
No. of boys	12	10	8	7	5

Q3 Answer the following questions. (Any 3).

12

- a. Cost of one CTP plate is Rs.850. A job requires 100 plates and 2% more as wastage. Find the selling price of total number of plates for this job with 5% loss.
- b. Find compound interest for Rs.1000 for 100 years at 10 % per year rate.
- c. Find the volume of anilox roller having 1000 cubical cells of side 5 mm each.
- d. Find the cost of putting wire fence along the circumference of a ground having 7 m radius. Height of the fence is 2m. Rate = Rs.250 per m².

Q4 Answer the following questions. (Any 3)

12

- a. Original price of the Sketchers shoes is Rs.3500. It is available at 10% discount. Find the selling price of 3 pairs.
- b. Printing of 500 visiting cards on one side in two color costs Rs.400. find the cost of printing 2500 cards on both sides in two colors with 10% profit.
- c. Amar can make one cupboard in 4 days. Akbar requires 5 days for it. If they work together for 20 days, how many cupboards will be made?
- d. Find the mean, mode, median- 82, 83, 84, 89, 82, 83, 87, 83, 85, 85.
- e. Find the simple interest for 66 months if rate is 3% per month, amount is Rs.66000.

Q5 Answer the following questions. (Any 2)

12

- a. Speed of machine P is 20000 copies per hour, Q is 25000 and R is 40000. If P and Q operate for 2 hours each, Q and R for 1 hour each and P and R for 3 hours each; total how many copies will be produced?
- b. Draw a line graph or bar chart

Dot %	10	20	30	60	100
Dot gain	12	23	35	75	95

c. Draw a line graph or bar chart

Subject	Physics	Chemistry	Biology	Maths
Marks	90	150	60	60

Q6 Answer the following questions. (Any 2)

12

- A paper has a width 841 mm and length 1189 mm. Find out the area of 500 such papers in sq.m.
- Find simple interest and compound interest and compare. Rate 8.25% per year, Time= 5 years, Amount = Rs.5000
- Find mean, mode and median-
2233.44, 2244.33, 2443.32, 2434.23, 2233.44, 2442.33, 2343.42, 2243.34, 2233.44, 2344.23

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Basic Prepress

Code: M202

Duration: 03.00 Hours

Marks:80

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)

20

- a. Explain additive color theory & state in 2 applications.
- b. Define i) color ii) light.
- c. State classification of graphic original.
- d. List any 2 print media & 2 digital recording media.
- e. Define i) focal length ii) flare of line.
- f. State disadvantages of AM screening.
- g. State advantages of densitometry.

Q2 Answer the following questions. (Any 3)

12.

- a. Describe in detail, visible spectrum.
- b. Explain factors governing selection of original.
- c. State 4 advantages of digital recording media.
- d. Differentiate up to 4 points digital & conventional photography.
- e. State 4 advantages of electronic dot generation.

Q3 Answer the following questions. (Any 3).

12

- a. Define i) Wavelength ii) Frequency.
- b. Define original & state 2 required proportion of original.
- c. Differentiate up to 4 points electronic media & print media.
- d. State full form of CCD & CMOS.

Q4 Answer the following questions. (Any 3)

12

- a. Explain subtractive color theory & state its two applications.
- b. Define magnification & state its formula.
- c. List any 4 digital recording media.
- d. Find out image distance of object placed at 15 cm away from 5 cm focal length of lens & calculate magnification.
- e. Define opacity & optical density.

Q5 Answer the following questions. (Any 3)

12

- a. Differentiate up to 4 points color & light.
- b. Calculate magnification of object placed 30 cm away from lens of focal length of 8 cm, its image is formed at distance 60 cm.
- c. List any 4 lens aberrations & state one defect each.
- d. State standard screen angles of process ink color. State one causes & remedy of moire.
- e. Explain working principle of densitometer.

Q6 Answer the following questions. (Any 3)

12

- a. Explain i) line tone original ii) halftone original
 - b. State 2 advantages each of print media & electronic media.
 - c. Differentiate up to 4 points AM & FM screening.
 - d. List 4 parameters which can be measured by densitometer.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Binding & Finishing

Code: M203

Duration: 03.00 Hours

Marks:80

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)

20

- a. Write four names of Binder's aids.
- b. Write four parts of single knife guillotine machine.
- c. Write four properties of adhesive.
- d. Name any four parts of three knife trimmer.
- e. Define folding with two applications.
- f. Name four parts of book sewing machine.
- g. Define lamination with two applications.

Q2 Answer the following questions. (Any 2)

12.

- a. Explain following finishing operations.
 1. Slitting
 2. Trimming
 3. Creasing
- b. Write following paper sizes
 1. Fullscape
 2. Medium
 3. Royal
 4. A3
 5. B0
 6. C0
- c. Describe construction and working of single knife guillotine machine.

Q3 Answer the following questions. (Any 2).

12

- a. Write terms related to adhesive 1.PUR 2.PVA 3.Heat set 4.Peel 5.Paste 6. Recyclability
- b. Explain working of knife folding machine with diagram and name its parts.
- c. Describe work flow of adhesive binder and write its advantages.

Q4 Answer the following questions. (Any 2)

12

- a. Write three properties of boards and three applications.
- b. Explain construction and working of buckle folding machine with diagram
- c. Describe die cutting (punching) operation and state two applications.

Q5 Answer the following questions. (Any 2)

12

- a. Write working stages of case making machine and applications of hard case.
- b. Name any six securing materials and write their applications.
- c. Draw a diagram of three knife trimmer and write working of three type trimmer.

Q6 Answer the following questions. (Any 2)

12

- a. Describe construction and working of gathering machine.
 - b. Explain book sewing Machine and state its two applications.
 - c. Explain hot foil stamping. State foil structure with diagram.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Printing Process -I

Code: M204

Duration: 02.00 Hours

Marks:40

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 4)

16

- a. Define Prepress. State its functions.
- b. Define substrate. State 2 types of substrates.
- c. State 4 types of base materials used as lithographic image carrier.
- d. Draw a diagram of blanket to blanket configuration of offset printing process.
- e. Explain perfect binding process .
- f. Write 4 ISO paper sizes.

Q2 Answer the following questions. (Any 3)

12.

- a. Name 4 conventional printing process.
- b. What is the purpose of layout?
- c. Explain in details negative P.S plate manufacturing.
- d. Differentiate between sheetfed and webfed offset printing process (4 points).

Q3 Answer the following questions. (Any 3).

12

- a. State 2 advantages and 2 limitations of print media.
 - b. Describe any two methods of impression used in printing machine.
 - c. Explain the difference between wipe-on plates and P.S plate.
 - d. Explain the inking system used in lithographic offset machine.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Printing Processes II

Code: M205

Duration: 02.00 Hours

Marks:40

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)

16

- a. State 2 characteristics of letterpress process.
- b. State 2 characteristics of flexo image carrier.
- c. State 2 characteristics of gravure process.
- d. State 2 applications of gravure process.
- e. Draw schematic diagram of screen printing process.
- f. State two applications of gravure process.
- g. State 2 names of digital printing process.
- h. State 2 limitations of digital printing process.
- i. Write names of 2 social media apps.
- j. Write names of 2 graphic software.
- k. Write names of 2 types of paper.
- l. Write 2 British paper size.

Q2 Answer the following questions. (Any 3)

12.

- a. Describe construction of stack type flexography machine with diagram.
- b. State 2 advantages & 2 limitations of gravure process.
- c. Write process to prepare screen.
- d. Draw schematic diagram of electrophotography.

Q3 Answer the following questions. (Any 3).

12

- a. Compare flexography with gravure process upto 4 points.
 - b. Compare gravure with offset printing upto 4 points.
 - c. Write names of 4 substrates used in screen printing.
 - d. Compare electrophotography with inkjet upto 4 points.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Printing Material Science

Code: M207

Duration: 03.00 Hours

Marks:80

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)

20

- a. Mention four sources of cellulose fiber.
- b. State four appearance properties of paper.
- c. State four applications of food grade paper.
- d. What is security paper? Mention two properties of security paper.
- e. Define - pH and Tack of inks
- f. Explain liquid ink manufacturing process.
- g. State the general formulation and properties of offset ink.

Q2 Answer the following questions. (Any 2)

12.

- a. Define pulping. State types of pulping. Elaborate any one type in detail.
- b. Explain in details how the following impact the properties of paper
i) Moisture contents ii) RH iii) pH
- c. State the functions and types of pigments.

Q3 Answer the following questions. (Any 2).

12

- a. Explain in detail the construction of paper manufacturing process with diagram.
- b. Explain the structural properties of paper.
- c. Explain in details the use of additives in ink. State 5 additives generally used for the same.

Q4 Answer the following questions. (Any 2)

12

- a. Explain the working principle and types of watermarks used in paper manufacturing process.
- b. Explain the term printability. State and explain the factors effecting printability of paper.
- c. Why do we use driers in ink? State the different types of driers used.

Q5 Answer the following questions. (Any 2)

12

- a. What is recycled paper? State two advantages and disadvantages of recycled paper.
- b. With a diagram explain the functioning of three roll mill used for paste ink manufacturing.
- c. Explain the drying method
 1. Absorption
 2. Polymerization
 3. Heat set

Q6 Answer the following questions. (Any 2)

12

- a. State six factors affecting cost of paper.
 - b. Define
 1. Opacity of ink
 2. Scuff resistance
 3. Light fastness
 - c. What is OCR ink? State its two application and two advantages.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Image Carrier Plano

Code: M209

Duration: 02.00 Hours

Marks:40

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 4)

16

- a. Write definition of imposition and its applications.
- b. Explain importance of graining.
- c. State purpose of gumming and coating.
- d. Explain spectral emission characteristics of light.
- e. Write four advantages of waterless plate.
- f. Photographic film's optical & physical requirement- two each

Q2 Answer the following questions. (Any 3)

12.

- a. Explain types of graining.
- b. Elaborate positive working plate making process.
- c. Elaborate working of metal halide lamp with diagram.
- d. Explain working of external drum CTP with diagram.

Q3 Answer the following questions. (Any 3).

12

- a. Compare PS plate & CTP plate coating up to 3 points each.
 - b. Explain effect of humidity and pH on plate coating.
 - c. Elaborate negative working PS plate making process.
 - d. Elaborate working of auto plate processor with diagram.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Print Material Handling & Maintenance

Code: M210

Duration: 03.00 Hours

Marks:80

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)

20

- a. State the importance of maintenance.
- b. Name the types of lubricants used.
- c. Name the different types of waste generations in printing house.
- d. Which type of equipment used for transportation in printing press. Name them
- e. Name the different pallets used in press shopfloor and draw any one type.
- f. List 4 advantages of rack used for storage.
- g. Draw a cage wire stacking system.

Q2 Answer the following questions. (Any 2)

12.

- a. State meaning of surface tension & viscosity of lubricant.
- b. What is need of warehouse? Write any four advantages of warehouse.
- c. What is role of bearing. Name the differentiate types of bearing. Draw any one.

Q3 Answer the following questions. (Any 2).

12

- a. How to increase production efficiency of printing? What will be the effect on coating?
- b. How to reduce waste generation in printing press & post press department. State 3 points.
- c. Write type of different stacking machines used in shop floor, explain any one with schematic diagram.

Q4 Answer the following questions. (Any 2)

12

- a. Explain the TPM with its 2 important points
- b. Write the reasons of bearing failure.
- c. Write the safety feature of warehouse and lighting arrangement (any four).

Q5 Answer the following questions. (Any 2)

12

- a. Draw a schematic diagram of web reels stacking & movement direction. Explain FIFO & LIFO.
- b. Explain the meaning of AGV and its working.
- c. Name the different types of maintenance. Explain any one type of maintenance.

Q6 Answer the following questions. (Any 2)

12

- a. Elaborate the terms related to lubricant i) Flash and fire point ii) pour point
 - b. How to select a printing machine to be purchased. (write six points).
 - c. Write the requirement of warehouse for the following i) doors ii) floor
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Colour Essentials

Code: M211

Duration: 03.00 Hours

Marks:80

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)

20

- a. Write any four characteristics of additive theory of color reproduction.
- b. Differentiate up to 4 points – rod and cones.
- c. State four advantages of device independent color.
- d. Write working principle of densitometer and colorimeter.
- e. List any four characteristics of full color graphic original.
- f. State cause and remedy of moiré printing defect.
- g. Calculate color difference between Lab values (5, -4, 3) and (5.3, -3.3, 7)

Q2 Answer the following questions. (Any 2)

12

- a. Describe working of any one physical color specification system.
- b. With schematic describe working of spectrophotometer.
- c. Explain the meaning of additive failure and proportionality failure.

Q3 Answer the following questions. (Any 2)

12

- a. Describe working of subtractive theory of color reproduction.
- b. With example, explain metamerism.
- c. Define tri stimulus value and state its four characteristics.

Q4 Answer the following questions. (Any 2)

12

- a. Draw general spectral transmission curves of three process inks.
- b. Describe working of CIE Lab solid color measurement system.
- c. Write name and color temperature of any three illuminants.

Q5 Answer the following questions. (Any 2)

12

- a. Describe working of additive theory of color reproduction.
- b. Write formula to calculate hue, error and dot gain.
- c. Write screen angles for CMYK in offset printing and flexographic printing.

Q6 Answer the following questions. (Any 2)

12

- a. Name two dot shapes with one application of each.
 - b. Describe working of color reflection densitometer.
 - c. Compare color and light up to six points.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Press Management

Code: M401

Duration: 03.00 Hours

Marks:80

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)

20

- a. Describe planning & directing function of management.
- b. Write 4 functions of marketing department.
- c. Write 6 objectives of management.
- d. Explain types of inventories.
- e. Describe copy right act.
- f. Write 4 advantages of quality management.
- g. List 4 objectives of statical print process control.

Q2 Answer the following questions. (Any 2)

12.

- a. Describe organizing, motivating & controlling functions of management.
- b. Describe 5s & write its 2 advantages also.
- c. Define statical print process control & state its types of variation & list 2 types of chart

Q3 Answer the following questions. (Any 2).

12

- a. Explain single owner & partner form of business organization with its 2 advantages & 2 limitations.
- b. Define quality. Explain quality assurance & cost of quality.
- c. Describe any one type of color control chart for attribute.

Q4 Answer the following questions. (Any 2)

12

- a. With 3 functions each of stores department & sales department.
- b. Explain law of demand & law of supply.
- c. Explain concept of six sigma.

Q5 Answer the following questions. (Any 2)

12

- a. Describe any one type of leadership with its 2 advantages & 2 limitations.
- b. Describe any 3 ISO standards each for paper & ink
- c. Write 3 objectives of SPC. Also write about types of variation.

Q6 Answer the following questions. (Any 2)

12

- a. I) Draw organization chart of large printing press II) what is shop floor management; explain.
 - b. Write any 6 provisions of factory act 1948.
 - c. Explain any one control chart for variable with suitable example.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Costing and Estimating

Code: M402

Duration: 03.00 Hours

Marks:80

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)

20

- a. Define fixed and variable cost. Also state to four examples of each.
- b. Differentiate up to four points - proforma invoice and tax invoice.
- c. List along with use, any four tools of an estimator.
- d. List GST rates of any four printing raw materials and services.
- e. Describe forecasting life of asset.
- f. Draw general format of material requisition form and work instruction ticket.
- g. Explain standard press routine with suitable example.

Q2 Answer the following questions. (Any 2)

12.

- a. List any four methods of allocating expenses and explain one.
- b. Draw general format of summary of expenses and state different components in it.
- c. Estimate ink consumption for printing of 10000 A3 size paper having (260X375) mm print area. Printing is carried out on offset machine using black ink in halftone form. Substrate used is maplitho paper.

Q3 Answer the following questions. (Any 2).

12

- a. Describe six factors related to the hourly cost rate of offset printing machine.
- b. The web width is 39.5", length 250 m, gsm 47, weight of core is 2kg. Find out total weight of 10 such web rolls.
- c. State six technical specifications related to the notebook printing tender.

Q4 Answer the following questions. (Any 2)

12

- a. Describe time rate and work rate estimating.
- b. Calculate total weight of one ream of 220 GSM paper.
- c. List any 6 factors determining estimate of binding of 1000 books of A4 size.

Q5 Answer the following questions. (Any 2)

12

- a. Write 6 factors affecting business profitability
- b. Write sequence in perfect book binding.
- c. Differentiate up to 6 points actual & budget expenses.

Q6 Answer the following questions. (Any 2)

12

- a. Write short note on sales report and estimating
 - b. State six factors considered in estimating based on hourly cost rate.
 - c. Write size of A0, B0, C0, A3, B4, C2 paper size in millimeters.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April- May 2024

Course: Entrepreneurship Development

Code: M403

Duration: 02.00 Hours

Marks:40

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 4)

16

- a. Write four required qualities of an entrepreneur.
- b. Write four points showing the importance of entrepreneur to society.
- c. Write names of four famous business persons.
- d. Write four examples of startups.
- e. Write any four documents to be added with loan proposal.
- f. Write two functions each of sales and production departments.

Q2 Answer the following questions. (Any 2)

12.

- a. Define entrepreneur and write four functions of entrepreneur.
- b. Name six factors influencing the choice of location for starting an industry.
- c. Name six function of storekeeper.

Q3 Answer the following questions. (Any 2).

12

- a. Name any six banks.
 - b. Explain any one type of inventory control method.
 - c. Explain project report.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Environmental Sci & Disaster Management

Code: M404

Duration: 02.00 Hours

Marks:40

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 4)

16

- a. State the importance of environmental science.
- b. Differentiate between renewable and non-renewable source.
- c. Define VOC, write two examples of VOC in printing industry.
- d. State any four physical hazards in printing industry.
- e. Differentiate between natural and man made disasters.
- f. State any four effects of earthquake on living object of environments.

Q2 Answer the following questions. (Any 3)

12.

- a. Write the effect of printing wastes on environments.
- b. State any four activities to create awareness about environment.
- c. State any four health issues that are caused by chemicals in the printing industry.
- d. Explain the waste water management for any printing industry.
- e. State any four precautionary measures before the flood.

Q3 Answer the following questions. (Any 3)

12

- a. Define natural sources, write any two examples of them.
 - b. Write classification of environmental pollution in detail.
 - c. State any four precautions during handling the chemical in printing industry.
 - d. Define drought, state any two causes of it.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Gravure Printing Process

Code: M501

Duration: 03.00 Hours

Marks:80

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. Define terms. (Any 10)

20

- a. Copper plating.
- b. Chrome plating.
- c. Cell.
- d. Offsetting
- e. Lightfastness.
- f. Viscosity.
- g. Elongation.
- h. Opacity.
- i. Image carrier.
- j. Tensile strength.
- k. Electroplating
- l. Fluff.
- m. Gloss.
- n. Matt.

Q2 Answer the following questions. (Any 3)

12.

- a. Describe gravure cylinder construction with schematic diagram.
- b. Give a flow chart of traditional gravure cylinder making by chemical process.
- c. What are the functions of copper & chrome in the gravure image carrier.
- d. Write 2 advantages and 2 disadvantages of chemical engraving process.

Q3 Answer the following questions. (Any 3)

12

- a. What is ESA system? Describe the purposes and advantages of ESA.
- b. Describe the function of doctor blade with schematic diagram.
- c. Compare Gravure process with Flexography process. (4 points).
- d. Name the ingredients in the gravure ink with their purpose.

Q4 Answer the following questions. (Any 3)

12

- a. Explain 2 reasons of doctor blade wear, give remedy also.
- b. Name the different engraving methods with their merits and demerits.
- c. Draw schematic diagram of cell structure with their names & applications.
- d. Name the different rubber roller cuts with schematic diagram.

Q5 Answer the following questions. (Any 3)

12

- a. Explain Electroplating process with schematic diagrams.
- b. Write the qualities required in impression rubber roller.
- c. Draw a schematic diagram of 4 color Inline gravure printing machine.
- d. Draw a schematic diagram of doctor blade holder assembly.

Q6 Answer the following questions. (Any 3)

12

- a. Write the 4 defects arising due to doctor blade and ink in gravure process.
 - b. Classify different substrates used in gravure printing.
 - c. Explain the registration method used in gravure printing.
 - d. What is advantage of screw or groove roller. Draw schematic diagram.
-

Government Institute of Printing Technology, Mumbai

Even term end theory examination April - May 2024

Course: Flexographic Printing Process

Code: M502

Duration: 03.00 Hours

Marks:80

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) 20**
- a. State four applications of flexography.
 - b. Write two advantages and two limitations of flexography.
 - c. State four characteristics of CTP flexo process.
 - d. Describe construction of integral type plate cylinder.
 - e. Describe any two engraving types on anilox roll.
 - f. State four end use requirement of flexo printed products.
 - g. Describe corona treatment.
- Q2 Answer the following questions. (Any 2) 12.**
- a. Write name and purpose of three parts of flexo plate. Also draw diagram.
 - b. Draw schematic diagram of 4 color CIC flexo press.
 - c. Write name and one property of any three substrates
- Q3 Answer the following questions. (Any 2). 12**
- a. Compare flexography with offset up to six points.
 - b. Explain plate mounting technique in flexography.
 - c. Describe construction of inline type flexo press.
- Q4 Answer the following questions. (Any 2) 12**
- a. Write three characteristics each of liquid and sheet flexo plate.
 - b. Draw schematic diagram of two-color stack type flexography.
 - c. Describe inking system of flexography. Draw diagram.
- Q5 Answer the following questions. (Any 2) 12**
- a. Explain the working of CTP flexo process.
 - b. Describe the construction of hybrid press.
 - c. Describe three factors to be considered while choosing anilox roll.
- Q6 Answer the following questions. (Any 2) 12**
- a. Write names of two photopolymers used in flexo plate, chemicals used for flexo plate development and their proportion.
 - b. Describe three factors to be considered while purchasing flexo press.
 - c. Explain chambered doctor blade system with diagram.
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