Reg. No.

Government Institute of Printing Technology Mumbai **Code: 103**

Term End Theory Examination April 2019 **Old**

Course: Basic Science

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Explain Lewis concept of acid and base. State example of weak acid and weak base.
b. Define atomic number and atomic mass number and state their relation.
c. State and explain inverse square law of illumination.
d. Define the terms **i.** Motion **ii.** Force **iii.** Acceleration **iv.** Retardation.
e. Define the terms fundamental and derived physical quantities. Give their examples.
f. Define units. State units of distance, velocity and force.
g. What is organic compound? Describe its classification and state one example of each.

Q2 Answer any two questions. **12**

a. State Newton's three laws of motion.
b. Explain three modes of heat transfer.
c. Define pH and pOH and derive the relation of pH+pOH=14

Q3 Answer any two questions. **12**

a. Define surface tension. What is the effect of impurities and temperature on the surface tension?
b. Explain the centrifugal and centripetal force and state two applications of centrifugal force.
c. Explain the electrolysis of copper sulphate solution with suitable diagram and state the net result of electrolysis.

Q4 Answer any two questions. **12**

a. State Faraday's second law of electrolysis. A given quantity of electricity is passed through two cells containing copper sulphate and silver nitrate respectively if 0.99 gm of silver and 0.29 gm of copper are deposited. Find the equivalent weight of silver when that of copper is 31.6
b. Define Electrolyte. State the example of strong electrolyte and weak electrolyte. State one example of crystalline and amorphous solid.
c. What is photocell? state the types of photocell and write two applications of photocell.

Q5 Answer any two questions. **12**

a. Define viscosity. State and explain the Newton's law of viscosity.
b. Derive the ideal gas equation.
c. State and explain the photoelectric effect and state the conditions for photoelectric effect.

Q6 Answer any two questions. **12**

a. Describe classification of elements and state two examples of each.
b. Define degree of Ionisation. State and explain factors affecting degree of ionisation.
c. Define electroplating and state the applications in printing.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: 107**

Term End Theory Examination April 2019 **Old**

Course: Applied Mathematics

Duration: 03Hours Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers with neat sketches wherever necessary.
2. Figures to the right indicate full marks.
3. Use of Calculator (Non-Programmable) is permitted.

Q1 Answer any ten questions. **20**

a. Simplify : $\frac{\log_5^{27}}{\log_5^3} - \frac{\log_7^4}{\log_7^2}$

b. Find the roots of the equation $5x^2 + 13x + 8 = 0$

c. Check the nature of the equation $6x^2 - 7x + 2 = 0$

d. Find 11th term of A.P. -5, $\frac{-5}{2}$, 0, $\frac{5}{2}$ .....

e. Solve $\begin{vmatrix} 2 & 3 & 1 \\ 6 & x & 2 \\ 4 & x & -2 \end{vmatrix} = 0$

f. Find the value of $\frac{\tan 30^0}{\cot 66^0}$

g. If $\tan A = \frac{3}{4}$, then prove that $\sin A.\cos A = \frac{12}{15}$

h. Find distance between the points (o, 5) and (-5, 0).

i. Find the slope of line passing through the points (-1, -2) and (-3, 8).

j. Find the value of $(\sin 30^0 + \cos 30^0) - (\sin 60^0 + \cos 60^0)$

k. Find the side of the cube whose volume is 1728 cm^3

l. If $t = x^{10} + 10^x + e^{-x}$, find $\frac{dy}{dx}$

m. Evaluate : $\int \frac{x+3}{x-1} dx$.

Q2 Answer any three questions. **12**

a. Form the quadratic equation whose sum of roots (α+β) = 5 and product of roots (αβ) =6

b. Solve by Crarmer's rule 3x+2y=5 ; 2x+3y=5

c. Find the coordinates of the point which divides the line segment joining the points (7,-6) and (3,4) in ratio 1:2 internally.

d. Find the slope and intercept on y-axis for the line $\frac{x}{2} - \frac{y}{3} = \frac{1}{4}$

e. The total surface area of a cylinder is 1980 sqm. and the perimeter of base is 66 m. Find its length.

Q3 Answer any three questions. **12**

a. Evaluate : $\lim_{x\to 2}\frac{x^4-2^4}{x-2}$

b. If $y = e^x + \sin x + \tan x + x^n$ find $\frac{dy}{dx}$

c. Find the volume of right circular cone whose radius is 3cm and height is 4cm.

d. Expand using Binomial theorem $(x-2y)^3$

e. Find the equation of line passing through the points (-4, 6) and (8, -3)

Q4 Answer any three questions. **12**

a. Prove that $\frac{1}{\log_{ab}^{abc}}+\frac{1}{\log_{bc}^{abc}}+\frac{1}{\log_{ca}^{abc}}=2$

b. Find 4th term in expansion $(\frac{x^3}{2}+\frac{2}{x^2})^6$

c. Prove that $\sin\theta+\cot\theta.\cos\theta = \operatorname{cosec}\theta$.

d. The curved surface of cone is 2310 cm^2. If its slant height is 35 cm. Find its volume.

e. Find $\frac{dy}{dx}$ if $y = xe^x$

Q5 Answer any three questions. **12**

a. Find the sum of A.P. 1+4+7+11+..... to 22 terms.

b. Evaluate $\frac{\tan 66^0+\tan 69^0}{1-\tan 66^0.\tan 69^0}$

c. Solve the equation using determinant method.

$$\frac{1}{x}+\frac{3}{y}=5,\quad \frac{3}{x}-\frac{4}{y}=2$$

d. What is the radius of sphere whose volume is $1437\frac{1}{3}$ cm

e. Solve for x if $\begin{vmatrix} 1 & 1 & x \\ 1 & 2 & 4 \\ 1 & 3 & 9 \end{vmatrix} = \begin{vmatrix} 1 & 2 \\ 1 & 2 \end{vmatrix}$

Q6 Answer any three questions. **12**

a. If $y = \sin(\log 5x)$, find $\frac{dy}{dx}$

b. Evaluate : $\tan 75^0$

c. Find $\frac{dy}{dx}$ if $y = \log\ (x^2+2x+5)$

d. Prove that $\cot^2\theta - \cos^2\theta = \cot^2\theta.\cos^2\theta$

e. Find the angle between the lines 3x-4y=420, 4x+3y=420.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: English Code: M101

Duration: 03Hours Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers 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. It looks difference (Rewrite using the past perfect tense)
b. It was not very complicated (Add a question tag)
c. Payal writes a letter. (Change the voice)
d. They are teaching as now facts about the sun and the stars. (Rewrite using not only....but also)
e. Kalpna Chawla was extremely proud of her birth place. (use present perfect continuous tense)
f. I love her more than you do. (change the degree)
g. Usain Bolt can run fast. (Rewrite using 'able to')
h. There were few rooms to hide. (change into negative)
i. If he does not try hard, he can not succeed. (use 'unless')
j. It was very terrible. (change into exclamatory)
k. He is too old to run. (remove 'too')
l. I did not take them seriously. (change the voice)

Q1 B. fill in the blanks with suitable articles (A, An, The) (any four) **04**

a. I saw _____ elephant in the circus.
b. _____ cow is an useful animal.
c. He wanted to become an artist and lived in _____ Himalayas.
d. That is _____ excellent college.
e. You have to come back in _____ hour.
f. He is _____ good speaker.

Q2 A. Correct the following sentence (any four) **04**

a. My mother knows well to teach Marathi.
b. India has a very ancient civilization.
c. Oranges are cheaper than apples.
d. He knows that you will be here today.
e. She believes what she sees.

Q2 B. Add prefix and suffix (any six) **06**

a. _____ possible	e)_____ rich	i) Courage_____
b. _____regular	f)_____equality	j) entertain_____
c. _____match	g) Shame_____	k) Manage _____
d. _____ understanding	h) faith_____	l) Please_____

Q2 C. Fill in the blanks with suitable interrogative pronouns (who, whom, whose, which) (any four) **04**

a. The person_____ is making the speech is my friend.
b. She is one of the woman_____ I feel I can trust.
c. The government _____ promises to cut taxes will be popular.
d. That is a man_____ word is as good as gold.
e. The festival_____ lasted all day, ended with a banquet.
f. I would like to take you to a canteen_____ serves excellent coffee.

Q3 ***Use following phrases in your own sentence (any seven)*** **14**

a. **i)** Eye opener **ii)** Bread and butter **iii)** A matter of time **iv)** To take part in **v)** At every stage **vi)** To bring out **vii)** To come up **viii)** To sound good **ix)** Break out **x)** White elephant

Q4 **a.** Write a letter to your father telling him about your institute with special reference to the various activities organized for students **08**

OR

b. Write a letter to the editor of newspaper drawing attention to the noise pollution in your locality. Suggest some solutions.

c. Fill in the blanks 'each' or 'every' where necessary (any four) **04**

i. He get paid _____ five months.
ii. The world cup tournaments are held_____ four years.
iii. There were five flowers on the table_____flower was a different color.
iv. I tried to phone her two or three times, but _____ time there was no reply.
v. As we know_____ parent worry about their children.
vi. Begin your answer to _____ question on a separate sheet of paper.

Q5 ***a. Read the passage carefully and answer the questions given below.*** **10**

Kalpna Chawala was extremely proud of her birth-place and made every effort to bring it into the lime-light. During space flights she would proudly point it out to her fellow-astronauts. Onces, during the second flight she remembered her closest friend, Daisy Chawala, who died in a road accident. In fact, despite her celebrity status, she took pains to track down her former teachers, classmates and friends in India and showed a keen desire to stay in touch with. Her affectionate and humble nature won the hearts of all who came in contact with her.

Although Kalpana had a strong desire to go to Mars, fly over its canyons and die in space, she was equally concerned about the well- being of the earth. She always urged young people to listen to the sounds of nature and take care of our fragile planet. During her space trips, she took many breathtaking photographs of the earth for various terrestrial studies later on the ground. When she was in space, she always felt a sense of connection with everyone on the earth.

It was Kalpana's cherished desire to visit India again. But that was not to be. A few months after her tragic death, Harrision visited India. He went to her school and college, met her family, teachers and friends and scattered her ashes over the Himalayas.

Solve the following questions.

i. What is the extract about?
ii. How was Kalpana connected with India and Indians?
iii. How was Kalpana connected about the well-being of the eath?
iv. What was Kalpana's cherished desire?
v. What would you like to do for India?

Q5 ***b.*** Write a summary of the above passage with suitable title. **04**

Q6 ***a.*** Write a short conversation between two friends on the summer vacation planning. **06**

Q6 ***b. Solve the following (any six)*** **06**

i. My uncle lives in Goa. I visit him. (often)
ii. We go for walk in the park. (sometimes)
iii. There is something wrong. (clearly)
iv. She is the right person for the job. (certainly)
v. I know the answer. (Already)
vi. Your reflexes are good. (make it negative)
vii. I have not seen many parts of the country. (add question tag)

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Communication Skill — Code: M102

Duration: 03Hours — Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. What are the barriers to communication? Explain.
b. Enlist the advantages and disadvantages of verbal communication.
c. What is communication? Explain the process of communication with its diagram.
d. Differentiate between hearing and listening.
e. How can graphic aid enhance technical communication?
f. What is non verbal communication?
g. How to achieve effective communication?

Q2 Write an essay about 250 words. (any one) **12**

a. The world without internet.
b. Say no to plastic.
c. Importance of reading habits.

Q3 Answer any two questions. **12**

a. Draft a notice and agenda for the meeting of cultural association of your institute.
b. Write a report on the possibility of opening Xerox centre in your college premises.
c. As the head of the department; draft a memorandum for the students. Misusing mobile phones in the college premises. Warn them of a stern action.

Q4 Answer the following questions. **06**

a. Write application letter in response the following advertisement.

i)'Wanted an assistant Manager' for software company. Candidate must be good at computer skill and must possess management skill. Preference will be given to candidates with a fluent command over English and some relevant work experience. Apply to the Personal Manager, Modem India Info-Tech, Navi Mumbai.

OR

ii) Wanted a clerk with a good knowledge of English and Arithmetic. Apply: Manager, New Press, Mumbai - 01

b. Write the contents of Good report. **06**

Q5 Read the following passage carefully and answer the questions given below. **08**

We travel for business. We travel for sight seeing. We travel for necessity. We go to Darjeeling to have a change of a climate or to have a look at the mighty Himalayas we go to Puri to enjoy a sea bath to see the sun coming out of these or to visit the temple of Jagannath. But who travel in our country to acquire knowledge? In Europe travelling is a necessary part of education.

The educational value of travelling can hardly be described. Bacon says that travelling in the younger age is a part of education and in the older age, it is a part of experience. Travelling teaches better than books, for no other sense organ is more potent a factor in learning than the eye. We read for instance of the existence, in the past of a university named Nalanda. They say there were one hundred lecture rooms. Is it a figment of imagination? Is it a faithful research of a day dreamer? We run to this spot and examine the work of excavation. Our doubts are at once removed. Our book knowledge is confirmed.

Travelling supplements our knowledge. History is made real to us. Geography is actualised. Economics is tested and challenged. Sociology is placed on sure foundations. A visit to place of historical interest illumines things that would otherwise have remained hazy.

Questions:

i. What does travelling supplements?
ii. What is tested and challenged?
iii. Why do we travel in India?
iv. What is the educational value of travelling?

b. Attempt a summary of the above passage and suggest a suitable title. **04**

Q6 Answer the following questions. **08**

a. **i)** Draft a speech to be delivered in your student association programme on the harmful effect of junk food on the students.

OR

ii) As a general secretary of EVS committee, draft a speech that you would make on the occasion of world water day.

b. Write a short notes on **04**
i) Vowels **ii)** Consonants

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Basic Science | Code: M103

Duration: 03Hours | Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers with neat sketches wherever necessary.
2. Figures to the right indicate full marks.

Q1 Answer any ten questions. **20**

a. Define unit. Write one example.
b. Write two examples of each of its fundamental and derived quantities.
c. Define work. Write its unit.
d. Define power. Write its unit
e. Write long form of LASER.
f. Define reflection of light.
g. Define viscosity.
h. Define angle of contact. Write its unit.
i. Define adhesive force. Write its one example.
j. Define strong acid. Write its one example.
k. Define pH. Write its rang on pH scale.
l. State Levis concept of base. Write one example.
m. Define electroplating.
n. Define electrolysis.

Q2 Answer any three questions. **12**

a. Define error. State three types of error.
b. Define energy. State three laws of conservation of energy.
c. Write four characteristics of LASER.
d. State four postulates of Arrhenius theory of electrolytic dissociation.
e. Define pH and pOH and explain the pH scale with labelled diagram.

Q3 Answer any three questions. **12**

a. Distinguish between centripetal and centrifugal force.
b. State and explain Snell's law of refraction
c. State and explain Newton's law of viscosity.
d. State limitations of Arrhenius concept of acid and base.
e. Distinguish between Atom and Ion. (upto four points)

Q4 Answer any three questions. **12**

a. Distinguish between fundamental quantities and derived quantities. (upto four points)
b. State and explain Newton's second law of motion with derivation of $F = ma$
c. Explain molecular theory of surface tension. With suitable diagram.
d. Write any four applications of LASER.
e. Define weak acid and weak base. Write one example of each.

Q5 Answer any three questions. **12**

a. Write any four requirements of standard unit.
b. Distinguish between acceleration and retardation. (upto four points)
c. Explain why surface of water is concave in glass capillary tube.
d. State proprieties of acid and base.(two of each)
e. 0.1978 gms of copper was deposited by a current of 0.2 amperes in 50 mins. What is the electrochemical equivalent (E.C.E.) of copper?

Q6 Answer any three questions. **12**

a. Distinguish between precision and accuracy. (upto four points)
b. State and explain Newton's third law of motion.
c. Explain the term polarization of light with suitable diagram.
d. State and explain Lewis concept acid and base.
e. State and explain Faraday's second law of electrolysis.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Basic Engineering Code: M104

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. State and explain Kirchhoff's current law.(KCL)
b. Define leakage current and insulation resistance.
c. Describe power transmission with an example.
d. Define hydraulics and state any two applications of hydraulics in printing technology.
e. State types of friction with proper diagram and examples.
f. State and explain Boyle' s law
g. Define the following terms : **i)** addendum **ii)** dedendum **iii)** current **iv)** resistance

Q2 Answer any two questions. **12**

a. State and explain laws of friction with diagram, formula and example.
b. Explain any two mechanical drives in detail.
c. State and explain Ohm's law; also explain the relation between voltage, current and resistance with the help of circuit diagram and graph.

Q3 Answer any two questions. **12**

a. Explain star and delta transformation and their applications.
b. State two types of lubrication and explain any one in detail.
c. Compare good conductor and insulators (any six points)

Q4 Answer any two questions. **12**

a. State Kirchhoff's voltage law (KVL) also compare DC series and parallel circuits with examples and formulas.
b. Explain cams and followers in detail.
c. Explain the following related to Hydraulic
i) Work **ii)** Horse power **iii)** Mechanical Advantage

Q5 Answer any two questions. **12**

a. State and explain Charle's law ; also define pneumatics.
b. Define coefficient of friction and angle of repose. State two types of lubricants.
c. Explain working of single acting compressor in detail.

Q6 Answer any two questions. **12**

a. Explain with diagram **i)** Belts **ii)** Couplings.
b. Compare methods of drive (group drive and individual drive) (any six points)
c. Explain Pascal's law; also state two advantages and two disadvantages hydraulic system.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Printer Mathematics — Code: M106

Duration: 03Hours — Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Divide Rs.1162 among A, B, C in the ratio 35:28:20

b. How much time will it take for an amount of Rs.450 to yield Rs.81 as interest at 4.5% per annum of simple interest?

c. Find the mean and mode of following 5, 7, 9, 15, 11, 5, 3.

d. Find the volume and surface area of a sphere of radius 10.5 cm.

e. Express: **i)** As a fraction-a) 0.6% b) 56% **ii)** As a decimal- a) 0.04% b) 28%.

f. 'A' does a work in 10 days and 'B' does the same work in 15 days. In how many days they together will do the same work?

g. An athlete runs 200 meters race in 24 seconds what is his speed?

Q2 Answer any two questions. **12**

a. Sam purchased 20 dozens of toys at the rate of Rs.375 per dozen. He sold each one of them at the rate of Rs.33 What was his percentage profit?

b. The volume of a rectangular block of stone is 10368 cm^3. Its dimensions are in the ratio of 3:2:1 If its entire surface is polished at 2 paise per cm^2 then the total cost will be?

c. Find
i) Fourth proportional to 4, 9, 12
ii) Third proportional 16 and 36
iii) The mean proportional between 0.08 and 0.18.

Q3 Answer any two questions. **12**

a. How many spherical bullets can be made out of a lead cylinder 28 cm high and with base radius 6 cm, each bullet being 1.5 cm in diameter?

b. If $\frac{a}{b}=\frac{5}{6}$ find the value of $\frac{6a-5b}{2a+3b}$.

c. Define and solve the following
Mean of numbers : 1, 2, 3, 4, 5, 6, 7, 8, 9.
Mode of the numbers : 5, 7, 9, 13, 11, 5, 3.
Median of the numbers: 3, 5, 5, 7, 9, 11, 13.

Q4 Answer any two questions. **12**

a. Find the mode of the following distribution

Class interval	0-10	10-20	20-30	30-40
frequency	5	8	10	7

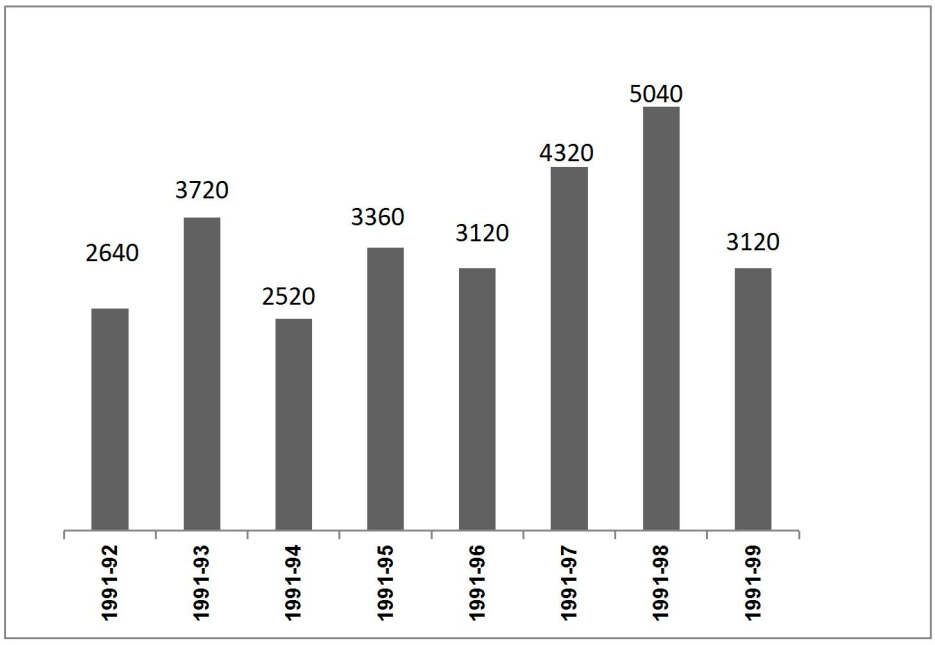
b. Find the volume of right circular cone whose radius is 5cm and height is 12cm.

c. Answer following questions after studying the graph given below.

i) A foreign exchange reserves in 1997-98 was how many times that in 1994-95?

ii) Find the percentage increase in the foreign exchange reserves in 1997-98 over 1993-94?

iii) The ratio of the number of years, in which the foreign exchange reserves are above the average reserves, to those in which the reserves are below the average reserves is.



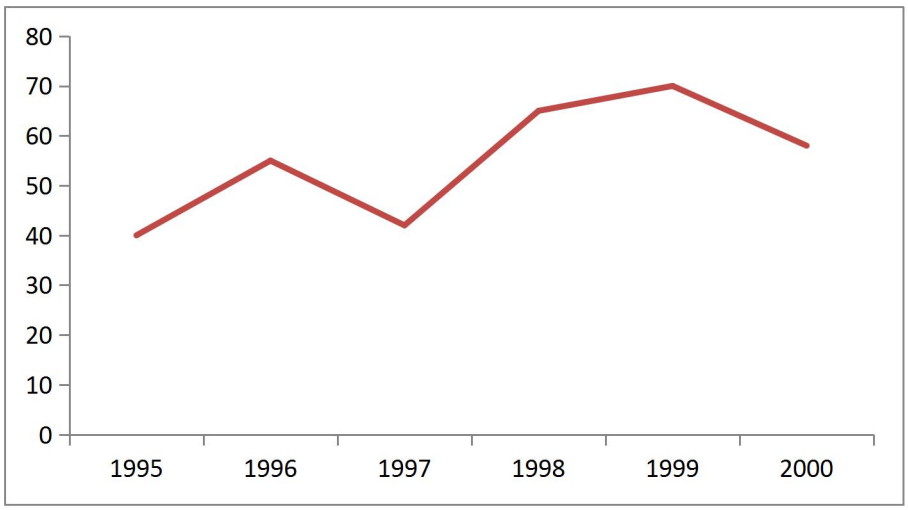
Foreign exchange reserves of each country (in millions US $)

Q5 Answer any two questions. **12**

a. A certain sum of money amounts to Rs.1008 in 2 years and Rs.1164 in 3 ½ years. Find the sum and rate of interest.

b. Evaluate i) 28% of 450 + 45% of 280 ii) $16\frac{2}{3}$ % of 600 gm – $33\frac{1}{3}$ % of 180 gm.

c. The following line graph gives the annual percentage profit earned by company during the period 1995-2000. Study the line graph and answer the questions below.



i) What is average profit for given years?

ii) What is the total percentage profit from 1995 to 2000?

iii) Find the ratio percentage profit in 1995 and 1996?

Q6 ***Answer any two questions.*** **12**

a. Find x:

i) x% of 25 = 2.125

ii) 9% of x = 63

iii) 0.25% of x = 0.04

b. Find the simple interest on Rs. 3000 at 6 ¼ % p.a. for the period from 4th Feb. 2005 to 18th April 2005.

c. Study the pie chart and answer the following questiones.

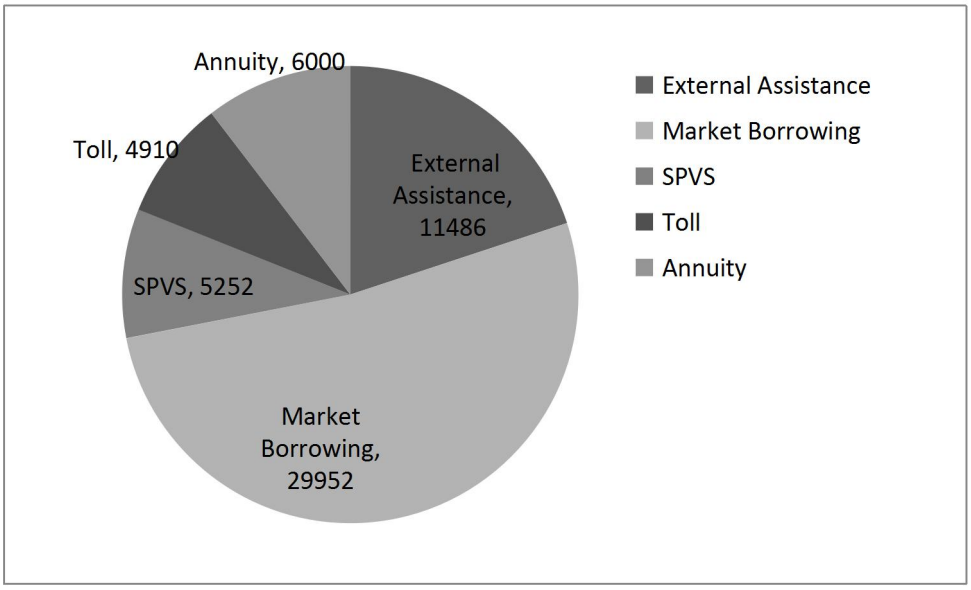
Sources of funds to be arranged by NHAI for phase II projects (in crores Rs.)

Total fund to be arranged = Rs.57,600 crores

i) Near about 20% of the funds are to be arranged through which source?

ii) The central angle corresponding to market borrowing is?

iii) The ratio of the funds to be arranged through toll and that through market borrowing?



Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Basic Prepress | Code: M202

Duration: 03Hours | Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers with neat sketches wherever necessary.
2. Figures to the right indicate full marks.

Q1 Answer any ten questions. **20**

a. Define original.
b. Define subtractive color theory.
c. Write two advantages of recording media.
d. Write function of lens.
e. Write two advantages of FM screen.
f. Define digital photography.
g. Define resolution.
h. Write two properties of color.
i. Describe line original.
j. Write visible spectrum of color.
k. Define density.
l. Write purpose of magnification.
m. Write use of densitometer.
n. Name any two recording media.

Q2 Answer any three questions. **12**

a. Describe electromagnetic spectrum with diagram.
b. Write classification of original. Explain any one.
c. What is digital storage media? Write any two advantages.
d. Write four advantages of digital camera.
e. Define opacity and optical density.

Q3 Answer any three questions. **12**

a. What is resolution? Describe relation between LPI and DPI.
b. Define density. Write two advantages of densitometry.
c. Name the different types of recording media and explain any one.
d. Write types of original. Explain any one.
e. Write two application of each **i)** Ultra violet light **ii)** Infra red light.

Q4 Answer any three questions. **12**

a. Compare digital photography with conventional photography.
b. Write types of densitometers and explain any one.
c. Write two physical and two optical properties of different types of original
d. Describe subtractive primary and secondary color with diagram.

Q5 Answer any three questions. **12**

a. Define magnification. Write formulae of magnification.
b. Name the primary color and secondary colors of additive color theory.
c. What are the different types of memory cards? Write its two limitations.
d. Write working principle of sensor in camera.
e. Write two advantages and two limitations of FM screen.

Q6 Answer any three questions. **12**

a. Write two advantages and two limitations of hybrid screen.
b. What is color? Write principles of color.
c. Compare CD and S.D. card.
d. What is monochrome original? Give two examples of monochrome original.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Binding and Finishing — Code: M203

Duration: 03Hours — Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define: **i.** Binding **ii.** Finishing. State one application each.
b. List four advantages of ISO paper sizes.
c. State four parts of cutting machine with their purpose.
d. Define combination folding.
e. State four advantages of perfect binding.
f. List four applications of cold lamination.
g. Write the ISO paper sizes of **i)** A2 **ii)** B4 **iii)** C3 **iv)** A4

Q2 Answer any two questions. **12**

a. Write three names of adhesives and their specific applications.
b. Describe the working and construction of single knife guillotine machine.
c. Describe principle of knife folding with neat diagram.

Q3 Answer any two questions. **12**

a. Explain the construction and working of perfect binding machine.
b. Define Die cutting. Explain different types of dies.
c. Explain chemical principle of adhesion.

Q4 Answer any two questions. **12**

a. Describe pressure sensitive and thermoplastic adhesive.
b. Explain working and construction of three knife trimmer.
c. Explain construction and working of gathering machine.

Q5 Answer any two questions. **12**

a. Describe working of book sewing machine.
b. Explain foil stamping operation along with four applications.
c. Explain three properties of board.

Q6 Answer any two questions. **12**

a. Describe principle of buckle folding.
b. Define lamination and compare hot lamination with cold lamination
c. Explain inline finishing operations.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Printing Processes- I Code: M204

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any eight questions. **16**

a. Write four applications of printing.
b. Define original.
c. What is coating?
d. Write two advantages of offset printing process.
e. Write four names of machines used in binding.
f. Write basic components of an ink.
g. Write names of impact printing processes.
h. Write two names of non absorbent substrates.
i. Define "graining".
j. Define "perfecting".
k. Write two names of offset machine manufacturing companies.
l. Write any two binding styles.

Q2 Answer any three questions. **12**

a. Describe general work flow of printing.
b. Describe two methods of impression with diagram.
c. Name the four base materials used for offset plate making.
d. Draw a diagram of single color sheet fed offset machine and name its parts.
e. Define Binding and finishing.

Q3 Answer any three questions. **12**

a. Write the following paper sizes. **i)** A0 **ii)** A4 **iii)** Fullscape **iv)** Medium.
b. State the different types of offset plates.
c. Write four names of ink manufacturing companies.
d. Write classifications of printing industry.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Printing Processes- II Code: M205

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any four questions. **16**

a. Draw schematic diagram of flexography.
b. Draw schematic diagram of gravure.
c. Write four applications of screen printing.
d. Write two advantages and two limitations of screen printing.
e. Write four applications of digital printing.
f. Describe working of inkjet printing.

Q2 Answer any two questions. **12**

a. **i)** Describe working of stack type flexo machine.
   ii) Write three applications of gravure printing.
b. Write name and purpose of any three graphic software.
c. Write three British and three ISO paper sizes with proper unit.

Q3 Answer any three questions. **12**

a. Differentiate between Flexography and Gravure up to four points.
b. Describe gravure cylinder making by electronic engraving.
c. Write name and purpose of any four materials (or equipment) used in screen printing.
d. Write two advantages and two limitations of electrophotography.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Printing Material Science Code: M207

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Differentiate upto four points between chemical and mechanical pulp.
b. Explain any two optical properties of paper.
c. Explain structure of cellulose fiber with neat diagram.
d. State function of solvents in ink with types.
e. Explain lightfastness and pH of paper.
f. Explain heat seal resistance and opacity of ink.
g. State four factors affecting cost of paper.

Q2 Answer any two questions. **12**

a. Explain properties with unit **i)** Caliper **ii)** Bulk **iii)** Grammage.
b. Explain four functions of vehicles in ink its types.
c. Define pulp and paper. State the role of dandy roller in paper making machine.

Q3 Answer any two questions. **12**

a. State general formation of offset ink and write function of each ingredient.
b. Explain any three fibrous additives used in paper manufacturing.
c. Explain three properties each of security paper and food grade paper.

Q4 Answer any two questions. **12**

a. Explain three roll mill of paste ink manufacturing.
b. Explain ink absorbency and dimensional stability of paper.
c. Explain ink terms **i)** Viscosity **ii)** Tack **iii)** Length.

Q5 Answer any two questions. **12**

a. Explain any two methods of ink and on substrate.
b. Draw schematic diagram of paper manufacturing of machine part and explain.
c. Explain waxes, driers and antiset off additives used in inks.

Q6 Answer any three questions. **12**

a. State four properties of calcium based paper.
b. Explain any two types of pigments.
c. State any four advantages of recycled paper.
d. Explain rub and scuff resistance properties of inks.
e. Explain Tearing resistance property of paper.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Image Carrier Plano — Code: M209

Duration: 02Hours — Marks: 40

Instructions to candidates:

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

Q1 Answer any four questions. **16**

a. Define imposition and state its two purposes.
b. State graining and write need of graining.
c. Write function of following **i)** Developer solution **ii)** Gum Arabic **iii)** Lacquer **iv)** Plate finisher
d. Explain spectral emission characteristics of light sources.
e. State four characteristics of PS positive plate.
f. Write four advantages of waterless lithography.

Q2 Answer any two questions. **12**

a. Describe the classification of lithographic plates.
b. State chemical and physical (any two) properties of aluminium as a base for lithographic image carrier.
c. Explain importance of specific gravity and pH test performed on chemicals used in image carrier making.

Q3 Answer any two questions. **12**

a. Describe the stages involved in positive PS plate making.
b. State optical and physical requirements (any two) of films used in lithographic image carrier making.
c. State work flow of Ctp process with neat diagram.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Print Material Handling & Maintenance Code: M210

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. What is pallet? Name any two pallet used and its material.
b. What is AGV? Where it is used?
c. Name the any four lubricants used.
d. What is wear house? Write its function.
e. Which are the cost are taken in to the consideration while planning for purchase of machine.
f. Name the different types of maintenance procedures.
g. Name any four sources of waste generated in printing press.

Q2 Answer any two questions. **12**

a. With neat diagram explain roll handling AGV. Write its two advantages.
b. Describe the principle (function) of lubrication.
c. Describe requirements of good wear house.

Q3 Answer any two questions. **12**

a. What is pallet storage rack? Draw schematic diagram of it.
b. Explain FIFO and LIFO and also explain points to be consider in the inspection of raw material.
c. Why planned maintenance is required and its four advantages.

Q4 Answer any two questions. **12**

a. With neat diagram; explain counter balance walkie stacker.
b. Write the point to be considered while planning to purchase.
c. Write precautions to be taken to reduce waste generation in each stage of printing process.

Q5 Answer any two questions. **12**

a. With neat diagram; explain any one type bearing used in industry and its advantages.
b. Why personnel training and retraining requires for new purchased machinery.
c. How to increase machinery efficiency and how it affects on cost?

Q6 Answer any two questions. **12**

a. i) What is wire container? Draw schematic diagram of it.
   ii) Write reasons for bearing failure.
b. With reference to lubricant; explain **i)** Surface tension **ii)** Viscosity.
c. With reference to TPM; explain **i)** 5why **ii)** Need of TPM

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Color Essential | Code: M211

Duration: 03Hours | Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. Define "color".
b. Define "color temperature".
c. State the different color sensing elements of human color vision system.
d. Define the term "Metamerism".
e. Write names of two standard illuminanats used in color measurement system.
f. Define the "Device Independent color space".
g. Write down the full form of "CIE".
h. Write down the formula for calculating color difference. (deltaE)
i. List two applications of "Spectrophotometer".
j. Define the term "Density".
k. Define the term "Dot gain" and "Dot loss".
l. Define "Hue error" and write the formula for "Hue error".
m. List any two dot shapes used in printing.
n. Define "Moire pattern".

Q2 Answer any two questions. **12**

a. Explain "CIE lab" color space with neat diagram.
b. Define "Tristimulus value" of color and explain the method of calculation.
c. Explain the spectral behaviour of cyan, magenta and yellow inks / colorants with diagram.

Q3 Answer any two questions. **12**

a. Explain what are requirements to view a color?
b. Explain human color vision system.
c. List the factors controlling color sensation and explain any one in detail.

Q4 Answer any three questions. **12**

a. Compare between color and light upto four points.
b. Explain the working principle of pantone color system.
c. Calculate the color difference for given value L1=43; b1=14; L2=49; a1=48,a2=42; b2=16
d. Describe the term "Trapping" in detail.
e. Write down the two causes and remedies of "Moire pattern" and write the screen angles for CMYK offset printing.

Q5 Answer any two questions. **12**

a. Describe the four characteristics of Additive color theory and state its two applications.
b. Describe the four requirements ideal graphic reproduction and name two types of original.
c. Explain the working principle and construction of spectrophotometer.

Q6 Answer any two questions. **12**

a. Describe the four characteristics of subtractive color theory and state its two applications.
b. Explain the working principle and construction of Densitometer.
c. Explain working principle and application of color control patch and gray scale.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Press Management Code: M401

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Explain importance of 'planning' function of management.
b. List four duties of store department.
c. Write four functions of inventory department.
d. Explain copy right act.
e. Write four objectives of production department.
f. What is quality assurance? Explain.
g. What is SPC? Write its two objectives.

Q2 Answer any two questions. **12**

a. Explain any three provisions of factory act under health and welfare.
b. What is Six sigma? Explain.
c. Describe control chart for attributes.

Q3 Answer any two questions. **12**

a. Describe any two types of leadership.
b. Describe 5S in detail.
c. Explain control chart for variables with neat diagram.

Q4 Answer any two questions. **12**

a. Explain **i)** Directing **ii)** Co-ordinating function of management.
b. What is quality? Explain quality cost.
c. What is process capacity? Also explain types of variation during printing.

Q5 Answer any two questions. **12**

a. Explain any three functions of marketing and sales department.
b. What is ISO? Write any four ISO standards for printing paper and ink.
c. Explain **i)** Law of Demand **ii)** Law of supply**.**

Q6 Answer any two questions. **12**

a. **i)** Explain controlling function of management.
   ii) Explain law of diminishing utility.
b. Describe single owner and partner type of organisation with its three advantages each.
c. **i)** What is trade unionism? Explain with example.
   ii) Explain shop floor management.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Costing and Estimating — Code: M402

Duration: 03Hours — Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Differentiate upto four points between fixed cost and variable cost.
b. Explain cost recovery and service budget centre.
c. List four different forms used in costing and estimation.
d. Define ream, quire of paper.
e. State SPANKS formula and state meaning of terminologies.
f. Explain factors that determine rate of DTP.
g. State provisions for printing industry under GST.

Q2 Answer any two questions. **12**

a. Define cost and explain cost control system.
b. Explain WIT and state its purposes.
c. State three qualities and three tools of estimator.

Q3 Answer any two questions. **12**

a. How to calculate hourly cost rate?
b. Explain standard press routine and state two advantages.
c. Explain liability and disputes about delayed payments.

Q4 Answer any two questions. **12**

a. Explain time rate system with two advantages.
b. Find out A2 size reams that would be required for printing 5000 copies of 64 page of A5 size booklet.
c. Define tender and state technical specification in tender format.

Q5 Answer any two questions. **12**

a. How will you forecast life of assets and state two factors affecting profitability.
b. Differentiate upto four points costing and estimating. State paper sizes - crown, quad crown.
c. Explain direct and indirect taxes with examples.

Q6 Answer any two questions. **12**

a. Differentiate upto six points - work rate and time rate systems
b. Explain material requisition forms and delivery sales report.
c. Calculate quantity of ink required to print 15000 posters of 38X50 cm size in 4 color on art paper by offset process with heavy subject matter.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Entrepreneurship Development Code: M403

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any four questions. **16**

a. Write four qualities of entrepreneur
b. List four examples of successful entrepreneur. Also define entrepreneur.
c. Define micro industry. List three examples.
d. Explain how SSI helps in economic growth of country.
e. Write four advantages of e-commerce.
f. Explain Economic order quantity with neat diagram.

Q2 Answer any three questions. **12**

a. Define entrepreneurship. Write three functions of entrepreneur.
b. List and explain any eight factors affecting location of plant. What do you mean by SSI?
c. Explain any two schemes for SSI provided by Government.
d. Compare between centralised purchase and decentralised purchase upto four points.
e. Write four functions of stores.

Q3 Answer any three questions. **12**

a. Write small project report for starting small screen printing press in Khopoli.
b. Describe any two financial institutions approved by Government providing finance.
c. Explain any four factors to be considered while starting Gravure printing unit as an entrepreneur
d. Write four functions of marketing department.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Environmental Science & Disaster Management Code: M404

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any four questions. **16**

a. Define 'environment' write two purposes of environmental study.
b. Write names of four natural resources.
c. Write two problems associated with natural resources.
d. Write names of any four hazards materials used in printing industry.
e. What is meant by VOC? How VOC are generated?
f. Write names of four natural disasters.

Q2 Answer any two questions. **12**

a. Explain classification of Environmental Pollution.
b. Write six safety precautions related to printing industry.
c. Write two hazards each related to Earthquake, Flood and landslide.

Q3 Answer any three questions. **12**

a. Write two names each of Renewable and Non renewable resources.
b. Write two physical hazards and remedial measure related to printing industry.
c. Explain classification of disaster.
d. Write two advantages each of tree plantation and plastic waste reduction.

Government Institute of Printing Technology Mumbai Reg No.

Term End Theory Examination April 2019

Course: Gravure Printing Process Code: M501

Duration: 03Hours Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers with neat sketches wherever necessary.
2. Figures to the right indicate full marks.

Q1 Answer any ten questions. **20**

a. Write working principle of gravure printing process.
b. Write any two specifications of gravure printing cylinder.
c. Write two advantages of LASER engraving technique.
d. List any two materials used for making of Doctor Blade.
e. What is the ideal range of viscosity for solvent base gravure printing ink?
f. What is Hazing?
g. Write any two limitations of gravure printing.
h. Write two forms of gravure cylinder.
i. Write any two advantages of electronic engraving over chemical etching.
j. Write any two functions of Impression roller.
k. List composition of ink used in gravure printing process.
l. Write any four variable of electroplating.
m. Write any two causes of doctor blade wear.
n. Write any two chemicals used in electroplating process of gravure cylinder making.

Q2 Answer any three questions. **12**

a. Differentiate upto four points: gravure printing process and offset printing process.
b. Describe immersion factor of electroplating.
c. Write two merits and two demerits of engraving process.
d. Explain the doctor blade extension with respect to back-up blade with neat schematic diagram.
e. Write any four ideal characteristics of gravure printing ink.

Q3 Answer any three questions. **12**

a. Write any two problems with their possible remedies encountered during press run with respect to gravure image carrier.
b. State any two methods of degreasing. Describe any one which is used during the process of gravure cylinder manufacturing.
c. List any two types of cell structure used in preparation of gravure image carrier with its characteristics.
d. What is ESA? With neat schematic diagram explain the function of ESA.
e. Explain chemical engraving process.

Q4 Answer any three questions. **12**

a. Write any two applications and any two advantages of gravure printing process.
b. Describe the process of Nickel plating.
c. Write any two problems with their possible remedies during press run with respect to gravure printing inks.
d. Write ink and substrate consideration during selection of cell structure of gravure image carrier.
e. Describe the importance of viscosity control consideration for gravure printing inks.

Q5 Answer any two questions. **12**

a. Draw the process flow chart of gravure cylinder manufacturing which starts from Base shell (Steel cylinder) and ends with finished gravure image carrier.
b. Explain working principle and construction of LASER engraving.
c. List any two advantages of proofing. Describe working principle of Gravure proofing machine.

Q6 Answer any two questions. **12**

a. Explain working principle, advantages and limitations of ELS.
b. With neat schematic diagram, explain the process of electromechanical engraving.
c. Describe the process of chrome plating. Why chrome is used on engraved gravure cylinder?

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Flexographic Printing Process Code: M502

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Draw the diagram of flexographic plate and show any four parts of it.
b. Write four advantages of common impression cylinder flexographic printing machine.
c. State need and two functions of fountain roll.
d. Explain rub resistance required of flexographic ink.
e. State four characteristics of flexographic printing process.
f. List four advantages of CTP system.
g. Explain construction of inline flexographic printing machine.

Q2 Answer any two questions. **12**

a. Describe working and construction of chambered doctor blade inking system.
b. Explain three chemical properties of photopolymer plate.
c. Describe demountable plate cylinder construction.

Q3 Answer any two questions. **12**

a. Compare flexographic printing process with gravure printing process upto six points.
b. Explain the stages involved in liquid photopolymer plate making.
c. Describe any one impression loading method.

Q4 Answer any two questions. **12**

a. Define **i)** Depth to opening ratio **ii)** Cell volume **iii)** Cell wall.
b. Explain any three properties of absorbent substrate used for flexography.
c. Describe any three problems and one remedied in printing that occur in stack type flexo printing.

Q5 Answer any two questions. **12**

a. State any three problems and their remedies in plate mounting.
b. Describe the construction of flexographic impression cylinder.
c. Describe any one method of anilox roll engraving.

Q6 Answer any two questions. **12**

a. Explain any three requirements of negative used for flexography.
b. Define computer to plate technique and explain its components.
c. Explain any one drying system used in flexographic printing machine.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Rigid Packaging Code: M503

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. List two types of boards.
b. Write two examples of primary packaging.
c. List two secondary functions of packaging.
d. Write full form of RTE, STE.
e. List four cushioning materials.
f. List four applications of universal carton.
g. List two metals used for packaging.
h. Write four applications of Aerosol.
i. Write four properties of foil.
j. Write four applications of glass as packaging material.
k. Write four advantages of glass.
l. Write two packaging material for **i)** Milk **ii)** Ink
m. List two advantages of using software for package design.
n. List four tests used for package.

Q2 Answer any two questions. **12**

a. Explain following flutes with diagram and two applications each **i)** A flute **ii)** F flute.
b. Explain two piece can manufacturing process with neat diagram.
c. Explain glass manufacturing process in detail.

Q3 Answer any two questions. **12**

a. Write and explain any three primary functions of packaging.
b. With neat diagram; explain corrugated board manufacturing process.
c. Write three properties of Aluminum. Also write its three applications.

Q4 Answer any two questions. **12**

a. Write two suitable packaging materials for **i)** Mobile phone **ii)** Cold drink **iii)** Tablets **iv)** Mangos **v)** Water **vi)** Cheese.
b. What is FEFCO? Write its three functions.
c. Explain tube manufacturing process.

Q5 Answer any two questions. **12**

a. Write any two after treatments given to glass.
b. List and explain any three factors to be considered write designing a carton.
c. Explain vibration test which standard is used for testing procedure.

Q6 Answer any two questions. **12**

a. Explain primary and secondary packaging system.
b. List raw materials used in glass manufacturing. Write three disadvantages of glass.
c. **i)** Draw neat diagram of packaging life cycle.
ii) Explain drop test of package.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Plano Sheet Fed Printing Code: M504

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Draw a diagram of inking system and name its parts.
b. Write names of two parts of blanket cylinder.
c. Explain the principle of Lithographic offset.
d. Differentiate between single sheet feeder and stream feeder up to four points.
e. Name any two components of dampening solution. Also state their purpose.
f. Describe pressure setting of impression cylinder in connection with paper thickness.
g. Write causes and remedies of following **i)** Scum **ii)** Hickeys.

Q2 Answer any three questions. **12**

a. Draw a diagram of plate cylinder and name its parts.
b. List any four mechanical components of feed board of sheet fed offset press.
c. Write the functions of inking system.
d. Name any two types of blanket and explain any one.
e. Write function of following .**i)** Star target **ii)** Slur guide
iii) Registration marks **iv)** Color control bar.

Q3 Answer any three questions. **12**

a. Draw a diagram of single color offset printing machine and name its parts.
b. State two names of pneumatic controls and their functions of feed board.
c. Write importance of pH of fountain solution.
d. Explain the following **i)** Under cut **ii)** Cylinder gap.
e. Name the different types of rollers involved in inking system.

Q4 Answer any three questions. **12**

a. Describe construction of impression cylinder with diagram.
b. Name the types of side lay and describe function of side lay.
c. Draw a diagram of conventional dampening system and name the parts.
d. Write name and function of any four parts of delivery unit.

Q5 Answer any three questions. **12**

a. Write one function each **i)** Endless tapes **ii)** Forwarding wheels
iii) Two sheet detector **iv)** No sheet detector.
b. Describe working of dampening system.
c. State the structure of compressible blanket with diagram.
d. Name the components of color control bar.
e. Name the dampening system used on offset machine.

Q6 Answer any three questions. **12**

a. Describe the three points registration with diagram.
b. Write functions of gum Arabic , Phosphoric acid, IPA and water in the fountain solution.
c. Write four characteristics of blanket.
d. Name any four international companies of offset machine manufacture.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Press Work Web | Code: M506

Duration: 03Hours | Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. What is a purpose of stroboscope on web pres.
b. Name three different types of folders and draw schematic diagram of former folder.
c. Describe the necessity of chilling device on heat set process.
d. Compare web press with sheet fed press upto four points.
e. Describe the working of flying splicer.
f. Write locations of reel stand and explain basement type location with diagram.
g. Write the result of loose winding and write the remedies.

Q2 Answer any two questions. **12**

a. Name the different types of registration devices. Describe any one.
b. Describe working of CIC press with schematic diagram.
c. Name three reel stands and explain any one with diagram.

Q3 Answer any two questions. **12**

a. Name the web controlling devices explain any one.
b. Name two different configurations of web presses. Explain "Y" type configuration with diagram.
c. Describe construction of jaw folder with diagram.

Q4 Answer any two questions. **12**

a. Name the different types of slitters explain zero speed splicer with diagram.
b. Name two types of chill rollers explain any one with diagram.
c. Describe functions of Dancer roller and compensator roller with diagram.

Q5 Answer any two questions. **12**

a. Describe working of stack type web press with diagram.
b. Name the different types of dryers used in heat set web press and explain high velocity hot air dryer with diagram.
c. What is fan out? Describe fan out controlling methods.

Q6 Answer any two questions. **12**

a. Name the ancillary operations performed on web press. Describe sprocket punching with diagram.
b. Describe with diagram **i)** Revolving reel stand **ii)** Expanding shaft.
c. What are the parts involved in folder super structure? Describe need and working of conveyor mechanism.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Digital Printing Code: M507

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Write eight applications of digital printing.
b. Describe working of charge generation material.
c. Write names of four large format printer manufacturing companies.
d. Write objective (purpose) of SWOP.
e. Define proofing. Write its two advantages.
f. Write function of RAM and ROM.
g. Write names of four computer manufacturing companies.

Q2 Answer any two questions. **12**

a. Write three characteristics each of impact and non- impact printing.
b. Draw schematic diagram of Electrophotography. Write names of major stages.
c. Explain working principle of inkjet process with diagram.

Q3 Answer any two questions. **12**

a. Write three characteristics each of liquid and dry toner.
b. Explain classification of ink jet printing process.
c. Write names of six substrate used in large format printing.

Q4 Answer any two questions. **12**

a. Describe meaning of print on demand, variable data printing and 3D printing.
b. Describe any two types of inkjet inks.
c. State any six preflight checks.

Q5 Answer any two questions. **12**

a. Describe Ionography (ION Deposition) process with diagram.
b. Describe any two types of thermal transfer printing process with diagram.
c. Explain functions of RIP and state names of two RIP developer companies.

Q6 Answer any two questions. **12**

a. Describe Magnetography process with diagram.
b. Describe six technical specifications of large format printer.
c. Write three characteristics each of hard proofing and soft proofing.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Electronic Color Correction — Code: M508

Duration: 03Hours — Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define color. Write names of colors in rainbow.
b. Describe Hybrid screening.
c. Write names of four companies of scanner manufacturing. Also list two types of scanner.
d. Explain UCR and GCR.
e. Describe function of color filters with example.
f. Define pixel, resolution, dpi and lpi.
g. Write names of four graphic file format and explain any one of them.

Q2 Answer any two questions. **12**

a. Differentiate between color and light upto six points.
b. Explain steps in color management of printing machine.
c. Explain purpose of CIP4 and list its three advantages.

Q3 Answer any two questions. **12**

a. With neat diagram; explain subtractive color theory.
b. Describe function of ICC in detail.
c. Describe dot gain, trapping and hue error.

Q4 Answer any two questions. **12**

a. Compare AM and FM screening upto six points.
b. Describe the meaning of color gamut and gamut mapping.
c. Explain construction and working of reflection densitometer.

Q5 Answer any two questions. **12**

a. Explain construction and working of flatbed scanner with neat diagram.
b. Define rendering intent and describe any two types of it.
c. List three factors which affect file size and color deviation (deltaE)

Q6 Answer any two questions. **12**

a. Write any six steps in preflight.
b. Define color profile and explain how it is prepared.
c. Explain construction and working of spectrometer with neat diagram.

Reg. No.

Government Institute of Printing Technology Mumbai

Term End Theory Examination April 2019

Course: Flexible Packaging Code:M509

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. Name two extrusion processes.
b. Name two types of collapsible tubes.
c. Name two polymers used in flexible packaging.
d. Name two essential requirements of food packaging.
e. Name two properties required for bakery product.
f. State one additive used for plastic packaging material with its function.
g. Write two advantages of lamitube.
h. What is aseptic packaging and its application?
i. What is Bag in Box?
j. What is meaning of flexible packaging?
k. Write the properties of polypropylene.
l. State meaning of active packaging and intelligent packaging.
m. Name two lamination processes.
n. Write the difference between rigid packaging and flexible packaging upto two points.

Q2 Answer any two questions. **12**

a. Compare MAP and CAP packaging upto six points.
b. Explain meaning of Blister packaging with diagram and its application.
c. Describe the different types of closures with different liners.

Q3 Answer any two questions. **12**

a. Explain any one lamination process with schematic diagram.
b. Explain the pouch manufacturing processes with diagrams of different types of pouches.
c. Name two different film manufacturing process and explain any one process.

Q4 Answer any two questions. **12**

a. Describe three properties required for carbonated soft drink packaging.
b. What is Tetra Pak? Explain multilayer in Tetra Pak.
c. Explain the requirement of Frozen food packaging.

Q5 Answer any two questions. **12**

a. Compare thermoplastic and thermoset packaging with examples.
b. Name the different properties and application of PVC, PP and PE.
c. Explain sustainable packaging.

Q6 Answer any two questions. **12**

a. Explain the glass packaging with manufacturing process.
b. Explain requirements for edible packaging with proper diagram.
c. Explain the types of indicatory labels used for life cycle product.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R101**

Term End Theory Examination April 2019

Course: English

Duration: 03Hours Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers 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. A positive attitude is everything (add a question tag)
b. The wall was too high for the little girl to climb. (remove "too")
c. He bought a book. (change the voice)
d. Kalidas was the greatest poet of India. (change the degree)
e. This book is difficult. (rewrite as a negative sentence)
f. It is a very long journey. (rewrite as an exclamatory sentence)
g. Many plants and animals live in water (rewrite in present continuous tense)
h. If I do not invite him, he will not come. (use unless)
i. Children are playing on the ground. (Frame a 'wh'-question so as to get the underline answer)
j. Bird watchers gathered to count the increasing numbers of native birds. (rewrite using and)
k. She is careless and arrogant. (use not only.....but also)
l. My mother would set up an establishment (rewrite the sentence by using 'used to')

Q1 B. fill in the blanks with suitable article (a, an, the) any four. **04**

a. _____chair is small of wood.
b. I want to meet _____ teacher.
c. _____book you want is out of print.
d. It was _____ excellent lunch.
e. It is _____ quarter to nine.
f. I came across _____ European man on my way.

Q1 C. Write noun form of the following (any four) **04**

i. Govern **ii.** Kind **iii.** Act **iv.** Happy **v.** Divide **vi.** Fail

Q2 A. make the adjective form of the following (any four) **04**

i. Accept **ii.** Hesitate **iii.** Administer **iv.** Collect **v.** Depend **vi.** Apply.

Q2 B. Add suffix and prefix (any six) **06**

i. Anti _____ **iv.** Mis _____ **vii.** _____age **x.** _____ism
ii. Tri _____ **v.** Dis _____ **viii.** _____ship **xi.** _____ment
iii. Mono _____ **vi.** Auto _____ **ix.**_____tude **xii.**_____ful

Q2 C. fill in the blank with suitable interrogative pronouns (who, which, what) any four **04**

a. _____ can I do for you?
b. _____ of these books will you take?
c. _____ said these words?
d. _____ of them wants to see me?
e. _____ do you wants to do?
d. I don't know _____ of them will actually get it?

Q3 ***A. Use the following phrase in your own sentence (any seven)*** **14**

i. Back up **ii.** Make up one's mind **iii.** Hard and fast **iv.** Stay in touch **v.** Give someone a hand **vi.** Never mind **vii.** Take it easy **viii.** Stop it **ix.** After all **x**. All of a sudden

Q3 ***B. Insert the given adverbs(any four)*** **04**

i. I go to bed at 10. O'clock. (usually)
ii. My friends are non smokers. (mostly)
iii. He is late for work. (seldom)
iv. I have told you to visit that place. (often)
v. He tell a lie. (never)

Q3 ***C. Write a short conversation between two friends on constructive use of mobile apps.*** **04**

Q4 **a.** Write a letter to the editor of a newspaper drawing attention to the increasing noise pollution in your city. **08**

OR

b. Write a letter to the Principal of your college requesting him to invite some "Career Guidance" expert to talk on career prospects in your institute.

Q5 ***A. Read the following passage carefully and answer the question given below.*** **12**

A great advantage of early rising is the good start it gives us in our day's work. The early riser can do a large amount of work before other men get out of bed. In the morning, the mind is fresh and there are hardly any distractions. As such, the work done at this is generally well done. In many cases, the early riser find time to take some excise when the fresh morning breeze is blowing and this exercise supplies him with a fund of energy until the evening. By beginning early, he knows that he has plenty of time to do thoroughly all the work that he is expected to do, and is not tempted to hurry over any part of it. All his work being finished in good time, he has a long interval of rest in the evening before the timely hour comes for going to bed. He gets sleep when sleep is the most refreshing, and after a sound sleep rise early next morning in good health and spirits for the labours of a new day.

Questions:

i. Mention any two advantages of early rising.
ii. Which work is well done?
iii. Why is the early riser not tempted to hurry over his day's work?
iv. What seems to be the purpose of writing this passage?
v. How will you motivate the late risers early in the morning?
vi. **a.** Early rising is good (rewrite beginning with 'It is.....')
b. All his work being finished in good times he has a long interval of the rest in the evening (make it a compound sentence)

Q5 ***B.*** Write summary of the above passage with suitable title. **06**

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R103**

Term End Theory Examination April 2019

Course: Basic Science – I

Duration: 03Hours Marks: 80

Instructions to candidates:

1. Attempt all questions and illustrate your answers with neat sketches wherever necessary.
2. Figures to the right indicate full marks.

Q1 Answer any ten questions. **20**

a. Define unit. Give one example.
b. Define stress. State three types of stress.
c. State Hooke's law.
d. Define surface tension. State its formula.
e. State Boyle's law. Write it's equation.
f. Define conduction of heat.
g. Define coefficient of linear expansion.
h. Write full term of LASER.
i. Define polarised light.
j. State Snell's law of refraction.
k. Define dispersion of light.
l. State Charle's law and state its equation.
m. State two properties of photon.
n. State Plank's hypothesis of quantum radiation.

Q2 Answer any three questions. **12**

a. Explain the needs of measurement in engineering science and technology.
b. State and explain Young's modulus of elasticity
c. State the factors on which the conduction of heat depends.
d. Distinguish between constructive interference and destructive interference.
e. Write any four characteristics of photoelectric effect.

Q3 Answer any three questions. **12**

a. Define fundamental quantities and derived quantities. State two examples of each.
b. Explain cohesive force and adhesive force with suitable example.
c. State two specific heats of gases and explain the relation between them.
d. Explain the concept of internal reflection of light.
e. Explain the use of photoelectric cell in Burglar atom.

Q4 Answer any three questions. **12**

a. What are requirements of good unit?
b. Distinguish between isothermal and adiabatic changes of gases.
c. State four characteristics of Laser.
d. Explain working principle of laser.
e. State any four preparation of x-ray.

Q5 Answer any three questions. **12**

a. Calculate the strain produced in a wire under tension. When it's stress is $12x10^5$ kg/m^2 (Y for material =2x10 kg/m^2)
b. State and explain Gay Lussac's law.
c. Explain construction and working of He-Ne gas laser with suitable diagram.
d. Differentiate between spontaneous and stimulated emission of light.
e. Explain construction and working of Coolidge tube of x ray with diagram.

Q6 Answer any three questions. **12**

a. Differentiate between precision and accuracy with suitable example.
b. State the effects of temperature and impurities on surface tension of the liquid.
c. Distinguish between good conductor and bad conductor of heat (four point)
d. State any four applications of Laser.
e. State any four application of x-ray.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R104**

Term End Theory Examination April 2019

Course: Basic Science - II

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any six questions. **12**

a. Why is an atom electrically neutral?
b. Define valency. State types of valencies.
c. Define the term Ionisation
d. Define electrode. Write two types of electrodes.
e. Define the term specific conductivity.
f. Define ferrous alloy. Write one example.
g. Write any two engineering uses of plastics depending upon their properties.
h. Define organic compound. State its example.
i. Distinguish between organic and inorganic compound.

Q2 Answer any three questions. **12**

a. State and explain the Arrhenius theory of electrolytic dissociation.
b. State and explain Faraday's first law of electrolysis with suitable diagram.
c. Name the substances used for compounding of plastics with example.
d. What is functional group? State the names of different functional group.

Q3 Answer any three questions. **12**

a. Define atomic number and atomic mass number. State the relation between them.
b. Explain electrolysis of copper sulphate solution using copper electrode.
c. A solution of the metal salt was electrolysed for 10 minutes with a current of 1.5 Ampere. The weight of metal deposited was 0.685 gm, what is the equivalent weight of metal?
d. What are plastics? Write their applications.

Q4 Answer any four questions. **16**

a. State duplet and octate rule and state one example of each.
b. Describe the process of electroplating with help of labelled diagram.
c. What is rubber? State the limitations of natural rubber.
d. Distinguish between natural and synthetic rubber. (upto four points)
e. Write any four characteristics of organic compound.

Q5 Answer any three questions. **12**

a. State and explain the Hund's rule with suitable example.
b. State and explain Faraday's second law of electrolysis with suitable diagram.
c. Write two properties and uses of Fe and Cu.
d. Distinguish between thermo plastic and thermosetting plastic. (upto four points)

Q6 Answer any four questions. **16**

a. Define electrovalency. Explain the formation of Nacl compound with help of atomic diagram.
b. Distinguish between Isotopes and Isobar. (upto four points)
c. Define Alloy. Write any three purposes of making alloy.
d. Write the composition, properties and uses of Duralumin.
e. State four properties and related applications of rubber.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R106**

Term End Theory Examination April 2019

Course: Basic Engineering - I

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any four questions. **16**

a. Explain the working of an Internal combustion engine.
b. What is power transmission and what is the need of mechanical drive?
c. Define prime mover and explain different types of prime movers.
d. Define pneumatics pressure, absolute pressure and gauge pressure.
e. Define friction and explain different types of friction in brief.
f. Explain difference between solid, liquid and semi-solid lubricants any four points.

Q2 Answer any two questions. **12**

a. Explain any three types of mechanical drives in brief.
b. What is co-efficient of friction and angle of repose? Also explain laws of static and kinetic friction.
c. List the types of lubrication and explain any one type of lubrication.

Q3 Answer any two questions. **12**

a. Define compressor and explain single acting compressor.
b. Explain general hydraulic system and component in it with neat and labelled diagram.
c. Explain the following
i) Flow and pressure control valves **ii)**Relief and safety valves
iii) Regulators **iv)** Addendum **v)** Dedendum **vi)** pitch circle and velocity ratio.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R107**

Term End Theory Examination April 2019

Course: Basic Engineering - II

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any four questions. **16**

a. State the rules for addition and subtraction of AC quantities.
b. Explain voltage and current graphical representation.
c. Define the following : **i)** Average value **ii)** Form factor **iii)** Peak factor **iv)** peak value.
d. Define capacitive reactance and inductance reactance, state their formula and units.
e. State various losses in transformer (any four points)
f. Define with its units **i)** Magnetic flux **ii)** Flux density

Q2 Answer any two questions. **12**

a. State and explain KCL and KVL with sign convention.
b. State ohm's law and state effect of temperature on resistance of conductor and insulator.
c. Explain working principle of single phase transformer. Also explain shell type and core type construction with suitable diagram.

Q3 Answer any two questions. **12**

a. Compare good conductors and bad conductors (any six points) with examples.
b. Explain star-delta and delta-star transformation with the help of formula and diagram.
c. Explain generation of three –phase A.C voltage and current with suitable diagram and waveform.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R109**

Term End Theory Examination April 2019

Course: Applied Mathematics - I

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any eight questions. **16**

a. Find the nature of equation $x^2 - 4x + 13 = 0$

b. Expand $(x + y)^3$

c. Prove that $\cos x^2 \ (1 + \tan x^2) = 1$

d. Evaluate $\frac{\tan 66 + \tan 69}{1 - \tan 66 . \tan 69}$

e. If $y = (x^2 + 3).\operatorname{cosec} x$, find $\frac{dy}{dx}$

f. If $y = \frac{\pi}{4} - 4x^3 + 3\sqrt{x} - \frac{2}{\sqrt{x}}$, find $\frac{dy}{dx}$

g. If $y = \frac{\sin x + \cos x}{\sin x - \cos x}$, find $\frac{dy}{dx}$

h. If $y = (\log x)^4$, find $\frac{dy}{dx}$

i. If $y = \cos(2\sin^2 x)$, find $\frac{dy}{dx}$

j. If evaluate $\int (x^5 + \sin x)\, dx$

k. Evaluate $\int \tan x . \sec^2 x \, dx$

l. Evaluate $\int \frac{1}{x \log x} dx$

Q2 Answer any three questions. **12**

a. If $y = \log(\sin x).x^2$, find $\frac{dy}{dx}$

b. evaluate $\int [x^n + e^x + \cos x + \frac{1}{x}] \, dx$

c. If $y = \sin x . \cos x$, find $\frac{dy}{dx}$

d. Prove that $\sin 30^0 \cos 60^0 + \cos 30^0 \sin 60^0 = 1$

e. Prove that $\sin A . \sin(60 - A) . \sin(60 + A) = \frac{1}{4} \sin 3A$

Q3 Answer any two questions. **12**

a. Evaluate $\int x^2 e^x \, dx$

b. **i)** If $y = \log[(\tan(4 - 3x)]$, find $\frac{dy}{dx}$

ii) If $y = \frac{x^3 + 1}{2x^2 - 1}$, find $\frac{dy}{dx}$

c. **i)** The circumference of the base of cylinder is 145 cm and height is 25 cm. find the volume of cylinder.

ii) Find the surface area and lateral surface of a hemisphere of radius 21 cm.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R110**

Term End Theory Examination April 2019

Course: Applied Mathematics- II

Duration: 02Hours Marks: 40

Instructions to candidates:

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

Q1 Answer any eight questions. **16**

a. Evaluate $\int_1^2 \frac{dx}{3x-2}$

b. If $\int_0^1 (3x^2 + 2x + K)\, dx = 0, find\ K$

c. Evaluate $\int_0^{\pi/2} sinx.cosx.dx$

d. Find the range and coefficient of range for the following distribution.

C.I	1-3	3-5	5-7	7-9
fi	2	6	10	12

e. Find K. If the mean of the following observation is 2.5
1, 2, 3, 2, 3, K, 1, 3, 1, 3, 5, 2.

f. Coefficient of variation of certain distribution is 5 and mean is 60. Find the standard deviation.

g. Find median of the following data.
16, 19, 12, 14, 13, 17, 16, 19, 20, 15, 16, 13.

h. Find the range and coefficient of range for the following distribution.

Xi	10	15	20	25	30
fi	7	10	12	18	11

i. Find the standard derivation for the following data : 1, 2, 3, 4, 5, 6, 7, 8, 9

j. If z_1=1+2i and z_2= - 4+i. Express $z_1.z_2$ in the form a+ib.

k. Simplify : $2i^2 - 3i^7 + 4i^6 + 2$

l. Find modulus of $1+i\sqrt{3}$.

Q2 Attempt any three **12**

a. Evaluate $\int_0^{\pi/2} \frac{sinx}{sinx+cosx}$ dx

b. Using DeMoiver's Theorem simplify

$$\frac{(cos3\theta - isin3\theta)^5\ (cos2\theta + isin2\theta)^8}{(cos5\theta + isin5\theta)^7\ (cos\theta - isin\theta)^4}$$

c. Draw histogram of the following data.

C.i	146-155	156-165	166-175	176-185	186-195
fi	5	7	9	14	6

d. Find the mean of the following distribution.

Marks	0-5	5-10	10-15	15-20	20-25	25-30	30-35
No. of students	7	10	16	32	24	18	10

e. Find mean-deviation from median of the following data : 1, 2, 3, 4, 5, 6, 7

Q3 Attempt any two **12**

a. Evaluate $\int_1^e \frac{logx}{x}$ dx

b. Find the mean and variance of the following.

C.I	0-10	10-20	20-30	30-40	40-50
fi	5	8	15	16	6

c. Express 1+i into polar form.

Reg. No.

Government Institute of Printing Technology Mumbai **R202**

Term End Theory Examination April 2019

Course: Reproduction Processes

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define magnification with formula.
b. List any four digital storage devices.
c. Describe Herschel effect.
d. What is hybrid screening? State two advantages.
e. Describe two optical and two physical properties of graphic original.
f. Differentiate upto four points between digital camera and conventional camera.

Q2 Answer any two questions. **12**

a. Differentiate upto six points between AM screening and FM screening.
b. Describe construction and working principle of densitometer.
c. Describe construction and working principle of contact frame.

Q3 Answer any two questions. **12**

a. State relationship between DPI, PPI and LPI.
b. Describe construction and working principle of Digital camera.
c. Describe the importance of time gamma curve of emulsion.

Q4 Answer any two questions. **12**

a. List and explain any three lens aberration.
b. State classification of photography film on basis of spectral sensitivity.
c. Describe halation and irradiation defects in photographic film.

Q5 Answer any two questions. **12**

a. State four different type of media used in reproduction photography.
b. Define **i)** Opacity **ii)** Specular density **iii)** diffused density.
c. Describe classification of graphic original.

Q6 Answer any two questions. **12**

a. Describe stages involved in line and half tone positive making.
b. Define latent image and explain its formation.
c. Define focal length and depth of focus.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R203**

Term End Theory Examination April 2019

Course: Binding and Finishing

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any six questions. **12**

a. What are the preforwarding operations in book binding?
b. What is edge decoration? What are the factors to be considered while edge decoration of a book?
c. Compare three knife trimmers to the single knife guillotine machine upto two points.
d. What is jogging and knocking?
e. Describe any one book covering style with suitable diagram.
f. Give any two advantages of I.S.O. paper sizes.
g. Write two applications of perfect binding.
h. Define term 'Binding' and 'Finishing'.
i. Give any two limitations of British standard paper sizes.

Q2 Answer any three questions. **12**

a. Define lamination. Write its application.
b. Explain working principle of buckle folding machine in brief.
c. Explain fraying out the slips operation.
d. Describe any two parts of case making machine with their functions.

Q3 Answer any four questions. **12**

a. Explain loose leaf binding in brief.
b. Describe the sewing method used to repair old books.
c. Write advantages of combination folding machine.
d. Describe any two securing materials.
e. Compare Burst binding and notch binding upto three points.

Q4 Answer any four questions. **16**

a. Explain the die-cutting and creasing process.
b. Explain with diagram of straw board cutter.
c. Define the term coating. Write its application.
d. Write down four British standard paper sizes.
e. Explain working principle of three knife trimmer.

Q5 Answer any three questions. **12**

a. Explain spiral binding technique in brief.
b. What are the sequence operation performed to repair the old books?
c. Explain two shot wet-on-wet binding process.
d. Give any four advantages of machine folding.
e. Name the tools and equipments used for book-binding two of each.

Q6 Answer any two questions. **16**

a. Explain any three forwarding operations performed in book binding.
b. Explain working principle of book swing machine.
c. Explain structure and working of modern single knife guillotine machine.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R205**

Term End Theory Examination April 2019

Course: Printing Processes

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. Define print media.
b. What is layout? Explain.
c. Name any two impact printing processes.
d. Define binding.
e. What is graphic original? Define graphic original.
f. Define lamination.
g. Explain relief printing with diagram.
h. List any four materials used for binding
i. Give two examples of electronic media.
j. List any two renowned commercial printers.
k. Define principle of lithographic offset.
l. Name any four tools used in binding
m. Define image carrier.
n. Define digital printing.

Q2 Answer any three questions. **12**

a. Write four advantages of print media.
b. Differentiate between lithographic offset and flexographic printing process.
c. State the types of original with example.
d. Name the four equipments used in packaging operation.
e. Name the different segments of printing technology.

Q3 Answer any three questions. **12**

a. Name the image carriers used for different printing processes.
b. Name two equipments used in binding with their uses.
c. Write four limitations of electronic media.
d. Draw a diagram of single color offset printing machine and name its parts.

Q4 Answer any three questions. **12**

a. Name the adhesives used in binding explain any one.
b. Name the equipments used for plate making explain any one.
c. Write four advantages of digital printing.
d. Compare print media with electronic media.
e. Write different styles of binding.

Q5 Answer any three questions. **12**

a. List the stages involved in contact positive making.
b. Draw a diagram of flexographic printing unit and name its parts.
c. Write four applications of print media.
d. Define 'coating'. Write applications of coating.
e. List physical properties of films used in plate making.

Q6 Answer any three questions. **12**

a. Write about the developments of printing technology.
b. Name the materials used for silk screen printing.
c. Write four advantages of P.S. plates.
d. Write uses of following any two
i) Board cutter **ii)** Binding cloth **iii)** Nipping press **iv)** Adhesive.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R207**

Term End Theory Examination April 2019

Course: Printing Material Science

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define paper and pulp.
b. Define RH and state its formula.
c. Explain with unit calliper and bulk.
d. State viscosity ranges of flexo, gravure, offset and screen inks.
e. Differentiate upto four points cold set and heat set inks.
f. State classification of pigment with examples.
g. Explain with diagram theory of human color vision.

Q2 Answer any two questions. **12**

a. State function and use of three non-fibrous additives in paper making.
b. State any two factors of effect of moisture on printability and runnability.
c. State any four requirements of flexo inks and state its two applications.

Q3 Answer any two questions. **12**

a. Draw labelled diagram of paper making machine.
b. Explain compressibility and absorbency properties of paper.
c. Explain absorption and oxidation polymerization of inks.

Q4 Answer any two questions. **12**

a. State four advantages of recycled paper and define recycled paper.
b. Define carbon black, state two properties and two disadvantages.
c. Explain optical properties of ink.
i) Gloss **ii)** Brightness **iii)** Opacity

Q5 Answer any three questions. **12**

a. Differentiate upto four points calendering and machine glazing.
b. Explain relationship between RH and moisture content.
c. Explain any two optical properties of paper.
d. Explain the purpose of vehicle in printing ink.
e. Explain microwave drying and UV drying of inks.

Q6 Answer any two questions. **12**

a. Explain relationship between viscosity and tack and state its units.
b. Explain folding endurance and tear resistance properties of paper.
c. State any four requirements of offset ink and state its two applications.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R209**

Term End Theory Examination April 2019

Course: Electronics

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define depletion layer and barrier potential with diagram.
b. Draw and explain bridge wave rectifier.
c. State the principle of photodiode.
d. Explain application of transistor as an amplifier.
e. Explain MOSFET as a switch
f. Draw symbol and describe construction of SCR.
g. Draw neat and labelled block diagram of PLC.

Q2 Answer any two questions. **12**

a. Explain briefly half wave rectifier.
b. Draw symbols of PNP and NPN transistors and explain construction of any one.
c. Draw symbol and state characteristics of TRIAC.

Q3 Answer any two questions. **12**

a. Draw and explain forward biased PN junction.
b. Define i) cut-off point ii) saturation point iii) active region.
c. Explain working of relay with symbol.

Q4 Answer any two questions. **12**

a. Explain working of capacitor.
b. List types of biasing methods and explain any one in detail.
c. Define transducers and explain with an example.

Q5 Answer any three questions. **12**

a. Compare upto four points conductors and semiconductors.
b. State any two parameters of full wave and bridge rectifier.
c. State any four characteristics of zener diode.
d. Draw symbol of MOSFET and explain its construction.
e. What are the types of switches, explain any one.

Q6 Answer any two questions. **12**

a. Explain zener diode with diagram and waveform.
b. Compare MOSFET and BJT.
c. List different types of transducer and explain temperature transducer.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R401**

Term End Theory Examination April 2019

Course: Press Management

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Explain two requirements each of planning and motivating.
b. Describe two functions each of sales and marketing department.
c. Write four safety measure taken in printing press.
d. Describe functions of inventory control.
e. Write down four factors affecting location of press.
f. State law of demand and law of supply.
g. Describe trade cycle.

Q2 Answer any two questions. **12**

a. Describe meaning of small scale industry and project report.
b. Describe any two types of communication
c. Write six functions of trade union.

Q3 Answer any two questions. **12**

a. Describe three functions of management.
b. Explain any two forms of business.
c. Describe role of personnel manager.

Q4 Answer any two questions. **12**

a. Describe ABC analysis.
b. Explain any one type of layout.
c. Describe law of diminishing utility, elasticity and equilibrium.

Q5 Answer any two questions. **12**

a. Write three functions and three qualities of entrepreneur.
b. Write six functions of storekeeper.
c. Write six features of factories Act.

Q6 Answer any two questions. **12**

a. Describe any two means of obtaining finance.
b. Explain factors affecting production.
c. Describe three characteristics each of Printers' Act, copy right act.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R402**

Term End Theory Examination April 2019

Course: Costing and Estimating

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define **i)** Cost reduction **ii)** Budget centre.
b. Define cost. Write two examples of it.
c. Write four advantages of using different forms in production.
d. Write names of unit in which quantity of paper is measured. How to express 1250 sheets according to this unit.
e. What is meant by wastage allowance? Describe its purpose.
f. What is meant by GSM of paper? How is it useful in estimation of paper?
g. Explain meaning of quotation with example.

Q2 Answer any two questions. **12**

a. Explain any three factors which affect profitability of printing press.
b. Explain contents of cost sheet. State its two applications in costing.
c. Explain standard press routine.

Q3 Answer any two questions. **12**

a. Explain how hourly cost rate is calculated.
b. Draw schematic diagram showing sample of material requisition form.
c. State following paper sizes in inches **i)** Double medium **ii)** medium **iii)** medium folio.

Q4 Answer any two questions. **12**

a. Explain Time rate system with example.
b. Write SPANKS formulas related to ink. Consumption and state meaning of each term.
c. Explain the meaning of direct tax and indirect tax with example.

Q5 Answer any two questions. **12**

a. Explain any three factors which affect life of asset.
b. 10000 books of A5size and 128 pages are printed on 60 gsm A3 size paper. Calculate number of reams of A3 size paper. Calculate number of ream of A3 size paper and its weight in kilogram.
c. Describe any three legal terms related to costing.

Q6 Answer any three questions. **12**

a. Explain work rate costing system with example.
b. Calculate weight in kilogram for web of paper of 50 gsm, 0.5 m wide and 1200m long.
c. Write four factors to be considered for estimating full bound book.
d. **i)** State four contents of works instruction ticket.
ii) What is meant by penalty clause?

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R501**

Term End Theory Examination April 2019

Course: Image Carrier Relief and Gravure

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. List classifications of relief based image carrier.
b. Write two limitations of rubber plate.
c. Write any two applications of photopolymer plate.
d. List requirements of metals used as a base metal for block making.
e. What is purpose of electroplating bath?
f. Name two types of laser used in gravure cylinder engraving.
g. List any two different cell type used in gravure cylinder making.
h. List any two advantages of photopolymer plate.
i. Name two chemicals used for developing photopolymer plate.
j. List any two different finishing operations performed in block making.
k. Define electroplating.
l. Write down volume formula of gravure cell.
m. Write any two advantages of laser engraving gravure cylinder.
n. List any two features of relief based image carrier.

Q2 Answer any three questions. **12**

a. Write stages involved in making rubber type duplicate plate.
b. Write two physical and two chemical properties of photopolymer plate.
c. Write properties of different processing chemicals used in block making.
d. List and two troubles and remedies involved in electroplating of copper.
e. Explain working principle and construction of electronic engraving unit.

Q3 Answer any three questions. **12**

a. Explain advantages of gravure cylinder making by electronic beam engraving.
b. Explain any two physical and chemical properties of rubber plate.
c. Describe nylo plates.
d. Explain any two troubles and their remedies involved in different block making process.
e. Describe any two variables of electroplating.

Q4 Answer any three questions. **12**

a. Write any two troubles and remedies of an electronic engraving of gravure cylinder.
b. Describe cell wall and cell depth to opening ratio concept of gravure cell.
c. Explain reclaiming gravure printing cylinder.
d. Describe light sensitive chemistry used in block making.

Q5 Answer any three questions. **12**

a. Describe construction of rubber plate.
b. Explain heat sensitive flexographic CTP systems.
c. Describe advantages of CTP system used in flexography plate making.
d. Explain characteristics of gravure printing.
e. Describe different types of cell structure with diagram.

Q6 Answer any two questions. **12**

a. Explain construction of gravure printing cylinder.
b. Describe light sensitive chemistry used in CTP flexo plates.
c. Explain physical requirements of negative and positive used in flexo plates.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R502**

Term End Theory Examination April 2019

Course: Press Work Relief / Gravure

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Write down two advantages and two limitations of platen machines.
b. Write down four applications of flatbed cylinder machines.
c. List down four application of flexography printing process.
d. Draw neat labelled diagram of inline flexography press.
e. Write two application and two limitations of gravure printing process.
f. List four advantages of different ink drying systems.
g. List four quality control aid used for flexography press.

Q2 Answer any two questions. **12**

a. Explain with neat diagram die cutting as a print finishing operation also list its two application area.
b. Describe factors, influencing selection of anilox roller for flexo press.
c. Describe the effect of doctor blade angle and pressure of gravure print quality.

Q3 Answer any two questions. **12**

a. Write down three trouble and remedies related to the print finishing processes.
b. Describe with schematic diagram construction and working of chambered doctor blade system employed on flexo press.
c. Describe the working of CIC press with diagram.

Q4 Answer any three questions. **12**

a. Explain with neat diagram construction and working of integral type flexo graphic plate cylinder.
b. Explain four advantages of inline converting operations.
c. Enlist any two problems and their remedies related to gravure impression roller.
d. Describe properties of "water based ink".

Q5 Answer any two questions. **12**

a. Describe construction and working of flexo (Tympan) impression bar and its purpose.
b. Compare stack type and common impression type flexo press upto six points.
c. Draw and explain color registration system of gravure press.

Q6 Answer any three questions. **12**

a. Enlist any two problems and their remedies associated with flexo ink.
b. Describe and explain the gravure doctor blade assembly.
c. List down four substrates and their application in gravure process.
d. Describe the need of surface treatment for non absorbent substrate.
e. Describe formulation of gravure printing ink.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R503**

Term End Theory Examination April 2019

Course: Image Carrier Plano

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. List any two function of Lacquer.
b. What is Dark reaction?
c. State function of printing down frame.
d. List any two methods of graining.
e. List constitutes of Deep-etch solution.
f. State any two factors affecting thickness of coating in a whirler.
g. List ingredients of egg albumen based coating.
h. What is shelf life?
i. List any two metals used for lithographic image carrier.
j. State function of slur target.
k. What is latent image?
l. Write two advantages of Diazo based plates over Gum deep etch plate.
m. State any two advantages of graining.
n. State principle of lithography.

Q2 Answer any three questions. **12**

a. Write features of lithographic image carrier. Who was the inventor of lithography?
b. Explain sensitometric properties of Diazo coating.
c. State any two optical and any two physical requirement of film used for offset plate making.
d. Describe the structure of image carrier used for waterless lithography
e. Explain the effect of contact angle of liquid with diagram.

Q3 Answer any three questions. **12**

a. Write the components counter etching and its importance.
b. What is specific gravity? Write its importance in lithographic image carrier making.
c. State stages involved in water deep etch process.
d. State working principle and function of color control patches and gray scale.
e. Explain working principle of step-and-repeat machine.

Q4 Answer any three questions. **12**

a. State physical and chemical properties of any two base metals used for lithographic plate making.
b. State the factors reinforcing ideal environment of plate making room.
c. State stages involved in positive working waterless lithographic plate making.
d. Explain emission characteristics and limitation of carbon arc lamp.
e. State stages involved in P.S. positive working lithographic plate making.

Q5 Answer any three questions. **12**

a. What are factor affecting the sensitivity of plate coating?
b. State the significance of pH and relative humidity of chemicals used in coating for lithographic image carrier making.
c. Write development of lithographic image carrier from lithostone to metal based plate.
d. State stages involved in wipe on lithographic plate making.
e. Differentiate upto four points between conventional and CTP offset plate

Q6 Answer any two questions. **12**

a. State stages involved in gum deep etch lithographic plate making.
b. Explain light sensitive chemistry and sensitometric properties of Diazo coating.
c. Describe properties of **i)** developer **ii)** Gum Arabic **iii)** lacquer

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R506**

Term End Theory Examination April 2019

Course: Press Work Web

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Draw schematic diagram of Y type configuration.
b. Describe any two reel locations.
c. Describe working of silicone operation.
d. Describe working of radiation drying.
e. Draw schematic diagram of chopper fold.
f. Describe web to web registration.
g. Describe working of web break detector.

Q2 Answer any two questions. **12**

a. Differentiate between sheetfed and webfed process upto six points.
b. Explain working of flying splicer with diagram.
c. Write cause and remedy for any three troubles in webfed printing.

Q3 Answer any two questions. **12**

a. Explain function of dancer roller with schematic diagram.
b. Explain working of high velocity hot air dryer with diagram.
c. Explain construction and working of sprocket punching.

Q4 Answer any two questions. **12**

a. Explain working of any two types of brakes.
b. Draw schematic diagram of former and jaw fold.
c. Explain working of Box tilt with neat diagram.

Q5 Answer any two questions. **12**

a. Explain working of zero speed splicer with diagram.
b. Explain working of any two register control devices.
c. Explain construction and working of any one type of slitter.

Q6 Answer any two questions. **12**

a. Describe construction and working of any one type of chill roll.
b. What is fan out? How it is controlled?
c. Explain working of any two antistatic devices.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R507**

Term End Theory Examination April 2019

Course: Digital Printing

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. Define Digital Printing. State its two advantages.
b. Describe construction of Charge Generation Material.
c. Draw schematic diagram of Inkjet Printing process and write its working principle.
d. Describe need of proofing.
e. Describe working of any one digital proofing system.
f. Describe two types of RIP
g. Write names of four output devices.

Q2 Answer any two questions. **12**

a. Draw schematic diagram of Electrophotography. State its working principle.
b. Describe construction and working of thermal transfer digital printer.
c. Write names of six substrates used in large format printing

Q3 Answer any two questions. **12**

a. Describe working of Charge Transport Material.
b. Write six properties which are required in substrate used in inkjet.
c. Write any six technical specifications of large format printing.

Q4 Answer any two questions. **12**

a. Draw schematic diagram of Ionography and Magnetography.
b. Describe three troubles and remedies related to inkjet printing.
c. Write six applications of large format printing.

Q5 Answer any two questions. **12**

a. Describe working principle of color digital photocopying system.
b. Explain how inkjet process is classified.
c. Describe functions of RIP.

Q6 Answer any two questions. **12**

a. Compare between conventional and digital printing techniques upto six points.
b. Compare liquid toner with dry toner upto six points.
c. Describe Hexachrome printing process. Also write one advantage and one limitation of Hi-Fi color gumut.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R508**

Term End Theory Examination April 2019

Course: Electronic color separation and correction

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any ten questions. **20**

a. List four hues.
b. Write function of Rods present in human eye.
c. Write two applications of drum scanner.
d. Write two applications of flat bed scanner.
e. What is color chart?
f. Write full form of AM and FM.
g. List two types of image setter.
h. List two input devices
i. Define dpi and lpi.
j. How copy should be mounted on scanner.
k. List two imposition software.
l. List two page designing software.
m. List two file formats.
n. Define RIP and PDF

Q2 Answer any two questions. **12**

a. Write three features each of **i)** TIFF **ii)** PDF file formats.
b. Explain preflighting, list its three advantages.
c. What is DTP? Write its three advantages.

Q3 Answer any two questions. **12**

a. With neat diagram; explain human eye structure.
b. With neat diagram; explain PMT. Write its application also.
c. Compare between AM and FM upto six points.

Q4 Answer any two questions. **12**

a. What is screen angle? Write examples for three, four color printing.
b. With neat diagram; explain construction and working of flat bed scanner.
c. With neat diagram; explain hexachrome printing.

Q5 Answer any two questions. **12**

a. With neat diagram; explain any one type of image setter.
b. Write six requirements of good original.
c. Explain system capacities and image assembly in imaging system.

Q6 Answer any two questions. **12**

a. Explain post script. Write three advantages of PDF.
b. **i)** Explain oil mounting of original.
   ii) What is trapping?
c. Describe data compression and data storage.

Reg. No.

Government Institute of Printing Technology Mumbai **Code: R509**

Term End Theory Examination April 2019

Course: Packaging Technology

Duration: 03Hours Marks: 80

Instructions to candidates:

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

Q1 Answer any five questions. **20**

a. What is aim of packaging and explain with natural example.
b. Define rigid packaging and state two applications.
c. Explain flexible packaging. State two applications.
d. Explain injection moulding technique.
e. State four qualities required for food packaging material.
f. Name any four specialized food product packages.
g. Describe meaning of recycling related to packaging.

Q2 Answer any two questions. **12**

a. State materials and properties used for plastic woven sacks.
b. Explain with example blister package, write its four applications.
c. Draw any four important signs on packaging used for life cycle and environment.

Q3 Answer any two questions. **12**

a. Explain three primary functions of packaging.
b. What is aseptic packaging? Explain with diagram.
c. Draw schematic diagram of wet and dry bond lamination machine and label its parts.

Q4 Answer any two questions. **12**

a. Name different types of collapsible tube manufacturing with different processes.
b. What is corrugated packaging? Explain flutes with different components and diagram.
c. State three limitations of plastic packaging and state three applications of special paper.

Q5 Answer any two questions. **12**

a. What is Tetra Pak? Show different layers of material with diagram.
b. Name different processes used for manufacturing plastic packaging material. Explain any one.
c. Explain thermoset and thermoplastic material and state its one application.

Q6 Answer any two questions. **12**

a. What materials are used for packaging of bakery products? State application.
b. Draw schematic diagram of reverse tuck carton of size 5x4x3 cm with section names.
c. Explain shrink wrapping with neat diagram. Write its application.