

CENTRAL INSTITUTE OF PETROCHEMICALS ENGINEERING & TECHNOLOGY
HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
THIRD SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours
 Course : PGD - PPT
 Subject : Plastics Materials –III

Max. Marks: 60
 Date : 09.01.2023
 Time : 10.00 a.m. to 01.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

30 x 1 = 30

1. The special tooling in filament winding that determines the shape of the filament-wound part is called:
 a) Collet b) core c) fixture d) mandrel Ans.: (d) mandrel
2. Zinc stearate is used as
 a) Lubricant b) Antioxidant c) Colourant d) Surfactant
3. Carbon black is a
 a) Conductive additive b) Impact modifier c) Anti static agent d) All of these
4. PVC is available in the form of?
 a) Powder mixtures b) Agglomerates c) Granules d) All of these
5. Mixed fed extruder are usually fed by
 a) Gravity b) linear c) Angular d) All of these
6. In laminar mixing, the decisive variable is
 a) Strain b) rate of application of strain c) stress d) none of these
7. To reduce accumulation of dust on plastics parts _____ are used.
 a) Pigments b) Anti-block agents c) Anti-static agents d) Fillers
8. Which one of the following is not a mechanical property of the material?
 a) Strength b) Stiffness c) Fatigue d) MFI
9. Kapton is the trade name of
 a) Polyamide b) Polyimide c) PPS d) PPO
10. The continuous Mixer has significantly larger output with higher product rate compared to
 a. FCM b. Intensive dry mixer c. Batch mixer d. None of these
11. Composites which do not have the same mechanical or physical property in all directions are said to be?
 a) Thermosets b) Thermoplastics c) Ionomers d) Anisotropic
12. _____ is a product made by bonding together two or more layers of materials
 a) Laminate b) Mat c) Prepeg d) Sheets
13. A suitable material for blending with PC is
 a) PE b) ABS c) PE d) None of these
14. Polymer blend with improved interphase is called
 a) Miscible blend b) immiscible blend c) homogeneous blend d) polymer alloy
15. Curing agent used to crosslink epoxy resin is
 a) Aliphatic amine b) Aromatic amine c) Anhydrides d) All the above
16. Which of the following molding processes is most labor-intensive?
 a) Hand Lay-up process b) Spray-up Process c) Vacuum bag process d) None of these
17. Out of the following, which polymer has the highest service temperature?
 a) Phenolic b) Epoxy c) Polyester d) Polyimide
18. The least costly matrix materials are _____.
 a) Polyesters b) Phenolics c) Polyimides d) Epoxies
19. Which one of the following combination is an essential part of a composite?
 a) Filler and pigments b) Plastic resin and reinforcement
 c) Catalyst and lubricants d) Resin and stabilizer
20. LCP stands for _____.
 a. Liquid Composite Polymer b. Light Composite Polymer
 c. Liquid Crystalline Polymer d. Low Crystalline Polymer
21. Helmets are made up of pressure bag molding process? Say True or False
22. Hexamethylenetetramine is a hardener? Say True or False
23. SEM is used for the determination of polymer blend miscibility. Say True or False
24. Cellulose is a natural polymer. True or False
25. Shellac Resin is the example for synthetic polymer- Say True or False.

- 26. RIM stands for _____
- 27. Expand HALS _____
- 28. Expand GFRP _____
- 29. Expand CFRP _____
- 30. GC stands for _____

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

- 1. Define dye. Give any two examples.
- 2. Give two examples for natural polymer.
- 3. What are the advantages of nano filler in polymer nanocomposites?
- 4. Define Compounding.

PART – C

Answer any **four** questions (Max. 100 words)

4 x 3 = 12

- 1. Discuss the applications of blowing agents in plastics.
- 2. Explain the role of matrix and reinforcement in polymer composite.
- 3. What is Carbon Nano Tube? Write short note on Carbon Nano Tube.
- 4. Write short notes on PP-EPDM blends.
- 5. Write Short Note on a) UV stabilizer b) Plasticizer

PART – D

Answer any **two** questions (Max. 300 words)

2 x 5 = 10

- 1. Explain the function and technical requirements for various additives. Describe important additives used in PVC compounding.
- 2. Define Lubricants. Explain the different types of lubricants used in polymer with examples
- 3. What do you mean polymer blends. Write the advantage of polymer blends. Explain any one technique for manufacturing of polymer blends.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
THIRD SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours
 Course : PGD - PPT
 Subject : Plastics Processing Techniques-III

Max. Marks: 60
 Date : 10.01.2023
 Time : 10.00 a.m. to 01.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

30 x 1 = 30

1. FRP pipes with better optical property is produced by-----.
 a) Filament winding b) Centrifugal casting c) Pultrusion d) None of these
2. Catalyst used for laminate process is -----.
 a) MEKP b) Cobalt Naphthalate c) Benzoil peroxide d) None of the above
3. The recycling triangular logo with no. 4 at the center of a logo stand for -----.
 a) PVC b) PP c) LDPE d) PET
4. The Fibre that floats in water is
 a) Polyamide b) Acrylic c) Polypropylene d) Polyester
5. In thin wall Injection molding machine, the screw diameter is _____.
 a) more b) less c) standard d) None of these
6. The part weight in structural foam molding is reduced to _____.
 a) 50 % to 60 % b) 10 % to 30 % c) 70 % to 90 % d) 0% to 5 %
7. Advantages of GAIM Process
 a) Ability to mold large parts b) Ability to mold Stress Free Part c) low cost tooling d) all of the above
8. A compression ratio of _____ is maintained in the Thermoset Injection molding.
 a) 3:1 to 5 :1 b) 2:1 to 3 : 1 c) 1:1 to 1:1.3 d) 1: 1 to 4 :1
9. In coinjection molding the outer surface is called _____.
 a) Core b) Cavity c) Skin d) None of these
10. Hospital plastic waste can be
 a) Mechanically recycled b) Reused c) Incinerated d) None of these
11. Which injection medium is used in GAIM?
 a) Oil b) Gas c) Petrol d) Diesel
12. Which one of the following is a high pressure process.
 a) Spray up technique b) Hand-Layup c) Matched die molding d) Centrifugal Casting
13. In the overflow technique of the Gas assisted molding process, _____ is filled first.
 a) Core b) Cavity c) Core & Cavity d) None of these
14. All electric injection molding machines can achieve -----
 a) 25% energy saving b) 40-80% energy saving
 c) 10% energy saving d) No energy saving
15. PET can be chemically decomposed by-----.
 a) Hydrolysis b) Alcoholysis c) Glycolysis d) All of the above
16. The inert gas used in structural foam molding is _____
17. Gas injection into the cavity may be metered either by _____ or by Pressure
18. PID controller is used in _____
19. The most important factor that influences control degradation is degradation in presence of _____
20. The full form of 4R are Reduce, _____, Recycle, Recover.
21. Robotics are used for higher production. Say True or False
22. In Recycling logo with no. 1 at the center if logo stands for PP. Say True or False
23. X- melt process is used for thin wall molding. Say True or False
24. FRP boats are produced by matched die molding. Say True or False
25. Plastics are heated up when they are incinerated. Say True or False
26. Expand GIM
27. Expand SMC
28. Expand FRP
29. Expand PWM
30. Expand MTC

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. Define the term "All Electric Injection Molding".
2. What do you mean by Incineration?
3. State any two merits of GAIM.
4. What is Pressure Bag Molding?

PART – C

Answer any **four** questions (Max. 100 words)

4 x 3 = 12

1. List out list the FRP processing Methods.
2. Differentiate Thermoplastic Injection Molding and Thermoset Injection Molding.
3. List out the various types of Plastic Waste Recycling.
4. Write the advantages of Advance Injection Molding.
5. Write merits and demerits of Spray-up process.

PART – D

Answer any **two** questions (Max. 300 words)

2 x 5 = 10

1. What do you understand with the term "Fiber Reinforced Plastics" and what are their contact Molding Methods?
2. Write short notes on:
a) Thin Wall Product Molding b) Pyrolysis
3. What is the use of robotics in molding process and where we can use it during process?



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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
THIRD SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours
Course : PGD - PPT
Subject : Plastics Testing-III

Max. Marks: 60
Date : 11.01.2023
Time : 10.00 a.m. to 01.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

30 x 1 = 30

1. IS specification for PE pipes for water supply is
2. Resistance to external blow test at 0°C is carried out for Water tank. Say True or False
3. Which of the following additive is not used in UPVC pipes.
a) Heat stabilizer b) Filler c) Lubricants d) Plasticizers
4. The pipe printed in green color identified as Class 4. Say True or False.
5. The axial shrinkage test as per IS13592 is carried out for which of the followings:
a) Type A pipe, b) Type B pipe, c) Both, d) Not applicable
6. In general, the tensile strength of PE films is more in direction.
7. Rectangular loft tank is tested as per IS:
8. IS 4905 is the standard for :
a) Inspection, b) Random sampling, c) SQC, d) Testing
9. The Weight of 9000 meters length of tape/fibre is called
10. Pull out test is applicable for:-
a) In line emitter, b) on line emitter, c) both a & b, d) Not applicable
11. The Hardness of PU foam is tested by:
a) Barcol Hardness, b) Rockwell Hardness, c) Indentation Hardness, d) Brinell Hardness
12. is a planar defects
a) Rolling, b) Voids, c) Ovality, d) Fatigue cracks
13. are transmitted in Ultrasonic method of NDT
a) Light wave, b) Sound wave, c) Micro wave, d) UV Rays
14. Measuring the defects & thickness of a sample by applying resonant frequency is called
a) Transmission Techniques, b) Pulse echo Techniques,
c) Ultra Sonic Technique, d) Impact echo method
15. Microwave based NDT is most suitable for
16. Macroscopic surface flaws can be determined by :
a) Microscope, b) Visual inspection, c) Ink Penetration, d) all the above
17. The surface defects are deducted in terms of fringe pattern by method
a) Hologram interferometry, b) Scanning laser, c) Infra Red, d) Thermography
18. The cut image of the sample is known as:
a) Holography, b) Tomography, c) Metallography, d) Photography
19. Strain can be measured by:-
a) Photo electric reflection polariscope, b) Scanning Laser, c) Laser Holography, d) All the Above
20. Most suitable method for detecting defects of Pipes, rods, sheet when extruded under water :-
a) Transmission Techniques, b) Pulse echo Techniques, c) Reference Techniques, d) All the above
21. Which test is not relevant to flammability:-
a) LOI, b) ROB, c) UL94, d) CLTE
22. Rate of burning test is carried out in position.
23. In flammability test, if the specimens drips and ignite the cotton then it is classified as:
a) V_0 , b) V_1 , c) V_2 , d) 5V
24. Smoke density test is carried out by Specific Gravity method. Say True or False
25. LOI value may vary depending upon the thickness of test sample. Say True or False.
26. Expand TGA
27. Expand FTIR
28. Expand ESCR
29. Expand ATB
30. Expand CTE.

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. Mention two Indian standards for the testing of HDPE pipes.
2. Mention the name of two tests for woven sacks.
3. Mention the name of two short term mechanical tests.
4. Mention the name of two commonly used NDT techniques.

PART – C

Answer any **four** questions (Max. 100 words)

4 x 3 = 12

1. Mention the advantages of plastic pipes.
2. Mention the name of tests for Water tanks as per IS 12701.
3. Describe briefly the Acetone immersion test.
4. Mention the advantages & disadvantages of Radiography.
5. Differentiate between Horizontal burning & Vertical burning.

PART – D

Answer any **two** questions (Max. 300 words)

2 x 5 = 10

1. Name all the tests carried out for PE films as per IS 2508 & describe one mechanical test in details.
2. Describe in details the Magnetic particle crack detection test.
3. Describe the Smoke density test in details.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
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THIRD SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours
 Course : PGD - PPT
 Subject : Communication Skills in English

Max. Marks: 60
 Date : 12.01.2023
 Time : 10.00 a.m. to 01.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

30 x 1 = 30

Identify the part of speech of bold word

1. He is an old **friend** of mine.
 a) Verb b) Noun c) Adverb d) Adjective
2. Everybody hates him for his **repulsive** looks.
 a) Noun b) Adjective c) Adverb d) Verb
3. John came **later** than Peter
 a) Verb b) Noun c) Adjective d) Adverb
4. The baby does not **resemble** either of its parents
 a) Verb b) Noun c) Adverb d) Adjective
5. A friend of mine has just invited me **to** Italy
 a) Preposition b) Noun c) Adverb d) Adjective
6. We went to the beach **because** she loves swimming.
 a) Preposition b) Conjunction c) Adverb d) Adjective
7. **Hey!** You are standing on my foot!
 a) Noun b) Verb c) Adverb d) Interjection
8. **She** is tall and beautiful.
 a) Pronoun b) Noun c) Verb d) Conjunction
9. Different parts of speech have different jobs. What do verbs like "**run**" and "**learn**" do?
 a) Express things b) Express actions c) Express quality d) Express number
10. Adverbs are words like "**quickly**" and "**quietly**" that tell us more about
 a) A noun b) A verb c) A adjective d) None

Choose the correct option (word) and fill in the blanks:

11. Today was a very ___ day.
 a) Colder b) cold c) coldly
12. We'll have to ___ if we want to catch that bus.
 a) Ran b) Running c) Run
13. ___ was that man you were talking to?
 a) What b) Who c) Why
14. I forgot my umbrella ___ I got wet.
 a) Because b) so c) although
15. ___ is a global problem.
 a) Poverty b) Poor c) Poorly

Fill in the blanks with suitable article (a/an/ the/zero article).

16. We should read ___ Bhagavad Gita.
17. ___ barking dog seldom bites.
18. Please change ___ torn hundred rupees note.
19. Cow is ___ useful animal.
20. My maid is -----honest lady.
21. The simple past is a verb tense that is used to talk about things that happened or existed before now.
 (True / False)
22. The word "people" is always uncountable. (True / False)
23. The auxiliary verb "to do" is never used in the present simple affirmative. (True / False)
24. A preposition is always followed by a "noun" .(True / False)
25. The quick brown fox jumps over the lazy dog' uses every letter of the alphabet.(True / False)

Abbreviate the following:

26. Doctor
27. Examination
28. Memorandum
29. Kilometer
30. Century

PART – BAnswer **all** questions (Max. 40 words)

4 x 2 = 8

1. How have you handled working under someone you felt was not good at communicating?
2. What is the difference between formal and informal letters?
3. Write synonyms of following words:
a) Alert b) Vent
4. Explain types of nouns briefly.

PART – CAnswer any **four** questions (Max. 100 words)

4 x 3 = 12

1. Change into passive voice:
a) They won the match.
b) Who is teaching you English?
c) I don't like smoking.
2. Convert the following sentences into simple past tense
a) He writes a letter.
b) They are playing cricket.
c) What had you done last year?
3. Make sentence of following homophones:
a) See, Sea
b) Cite, Site
c) Steal, Steel
4. Fill in the blanks with comparative forms of the adjectives given in brackets:
a) My laptop works _____ (good) than my brother's.
b) Diesel costs _____ (little) than petrol.
c) A computer works _____ (fast) than a calculator.
5. Write a small acknowledgement on assignment completion.

PART – DAnswer any **two** questions (Max. 300 words)

2 x 5 = 10

1. Write an essay on "Technology: Boon or Bane?"
2. Write a short report about the celebration of the "Republic Day" at your college.
3. You have lost your identity card while playing a football match in a different college. Write an application letter to issue a duplicate identity card.

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HEAD OFFICE : GUINDY, CHENNAI – 600 032.
ACADEMIC CELL
THIRD SEMESTER EXAMINATION – JANUARY - 2023

Duration : 3 Hours
Course : PGD - PPT
Subject : Industrial Management & Entrepreneurship

Max. Marks: 60
Date : 13.01.2023
Time : 10.00 a.m. to 01.00 p.m.

(DO NOT CHANGE SEQUENCE OF QUESTION NUMBER IN ANSWER SCRIPT)

PART – A

Answer **all** questions

30 x 1 = 30

1. GST is a part of:-
a) Direct Tax b) Indirect Tax c) IGST d) None of the these.
2. Which one of the following is the next stage to the Concept Stage of Product Planning and Development Process?
a) Idea Stage b) Product Planning Stage
c) Product Development Stage d) Test Marketing Stage
3. The major sources of air pollution are:-
a) Natural sources b) Manmade sources c) Both a and b d) None of these
4. As per Income tax provisions, Super Senior Citizen is called for an individual having age of :-
a) 55 years or above b) 60 years or above c) 80 years or above d) 90 years or above
5. Which of the following inventory techniques uses cards to monitor inventory movement?
a) ABC Analysis b) JIT Approach c) Kanban d) Kaizen
6. is the Japanese term for error-proofing.
a) KANBAN b) KAIZEN c) POKA-YOKE d) All of these.
7. GST is levied and collected by:-
a) Central Government b) State Government c) a and b both d) none of these.
8. The major which one of the following is a component of small scale industries:
a) Modern small scale industries b) Ancillary Industries
c) Cottage Industries d) All of the above.
9. 'Management is the art of getting things done through people'- who wrote this?
a) C S George b) F.W. Taylor
c) Mary Parker Follett d) George R. Terry
10. Margin of safety=.....
a) Profit/PV Ratio b) Contribution/ Sales c) Fixed cost/PV ratio d) F+P/S-V
11. In monopoly market the prices are generally:
a) High b) Low c) Reasonable d) Fluctuating
12. A skill or capability that enables an organization to conceive of and implement its strategies is its:
a) Strength b) Weakness c) Opportunity d) Threat
13. What is the full form of MSME:
a) Mean Sum Medium Enterprise b) Micro Small and Medium Enterprise
c) Micro Small and Modern Enterprise d) Modern Small and Median Enterprise
14. The concept of zero inventory is called:
a) Six Sigma b) Continuous improvement c) Just in Time d) Zero defects
15. Inventory is a kind of
a) Liability b) Assets c) Expenses d) Income
16. is concerned with choosing the best course of action from among the alternatives.
17. The process of developing ideas by a team of people on a specific topic and collectively seeking the solution of a problem is known as
18. is the author for X & Y theory of Motivation.
19. A part of quality management focused on fulfilling quality requirements is called.....
20. A organizational structure is the simplest form and has clear lines of authority and ease of decision making.
21. Indirect labour cost is a part of prime cost. (True/False).
22. GST is an indirect tax. (True/False).
23. Test Marketing stage is the next stage to the Concept Stage of Product Planning and Development Process. (True/False).
24. The main objecting of Scientific Management is to improve the economic efficiency of an organization. (True/False).

25. Horizontal organizational structure and Vertical organizational structure both are same. (True/False).
26. HRM stands for.....
27. ISO stands for.....
28. OSHA stands for.....
29. MRP stands for.....
30. MBO stands for.....

PART – B

Answer **all** questions (Max. 40 words)

4 x 2 = 8

1. What is JIT system of inventory?
2. Differentiate between Vision and Mission.
3. Differentiate between Verbal and Non-Verbal Communication.
4. Define motivation?

PART – C

Answer any **four** questions (Max. 100 words)

4 x 3 = 12

1. What are the advantages of on-the job training?
2. Explain Brain storming method of solving Quality control problem.
3. What are the importance of training?
4. Describe the advantages of quality circle.
5. What are the main objectives of costing?

PART – D

Answer any **two** questions (Max. 300 words)

2 x 5 = 10

1. What are the steps are required to be taken by an entrepreneur for starting a small scale industry?
2. What are the main functions of Management?
3. What is costing? Draft a proforma of Cost Estimation Sheet.
