CENTRAL INSTITUTE OF PLASTICS ENGINEERING & TECHNOLOGY HEAD OFFICE: GUINDY, CHENNAI – 600 032.

ACADEMIC CELL

SIXTH SEMESTER EXAMINATION – JUNE 2012

Duration : 3 Hours Max. Marks: 60 Course: DPMT/PD-PMT Date: 26.06.2012 Subject: Plastics Mould Design Theory - II Time : 10.00 a.m. to 01.00 p.m. PART - A Answer all questions $10 \times 1 = 10$ 1. Compression Mould used for Thermoplastics material - say true or false. 2. Cooling medium for transfer mould is ____ 3. Wire coating die used in gas injection mould - say true or false. We take _____ watts /Kg for calculation of heat in compression mould imperially. 4. 5. Convergent section angle is _____ c) 10º - 30º d) 15º - 45º 309 - 509 b) 20º - 60º 6. In thermosetting moulds normally cartridge heaters are used - say true or false. 7. In general, the runner wastage in hot runner mould is minimum b) maximum c) nil d) normal 8. Preform is used in 9. Automatic unscrewing mould is used for ___ b) external thread c) Both a & b d) none of these internal thread Pot area of Transfer mould is _____ 10. b) less than the projected area a) more than the projected area c) equal to projected area d) all of these PART – B Answer all questions (Max. 40 words) $5 \times 2 = 10$ 1. What are the types of Compression mould? What are the heat losses and additions taken into account for heat calculation? 2. 3. What are the ratios used in extrusion process? 4. Write the formulae for calculating the clamping tonnage for the following. b) Blow mould a) Compression Mould 5. What is outsert moulding? PART - C Answer any six questions (Max. 100 words) $6 \times 4 = 24$ 1. What is the difference between Hot runner mould and Insulated runner mould? 2. What is pinch-off? What are the types? Explain any one with simple sketch. 3. What are the types of Hot runner manifolds? Draw the sketch for any one. 4. What is Die Gap and Die land? 5. What are the advantages and disadvantages of Transfer mould? Define bulk factor? How you find LCD in compression mould? 6. 7. What do you mean by Approach Section and Land section?

Draw the horizontal flash compression mould drawing for a suitable component and mention all the parts with heat treatment.

Answer any two questions (Max. 300 words)

- 2. What are the types of dies for sheet extrusion? Explain any one with neat sketch.
- 3. Write short notes on the following:
 - a) Gas injection mould

PART - D

- b) Structural foam mould
- c) Stretch blow mould

 $2 \times 8 = 16$

CENTRAL INSTITUTE OF PLASTICS ENGINEERING & TECHNOLOGY

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ACADEMIC CELL

SIXTH SEMESTER EXAMINATION – JUNE 2012

Duration	: 3 Hours	Max. Marks: 60
Course : DPT	Г/PD–PT	Date : 26.06.2012
Subject : Qua	ality Management	10.00 a.m. to 01.00 p.m.
<u>PART – A</u>		
	Answer all ques	stions 10 x 1 = 10
1.	NPC stands for	
2.	Every manufacturing process is subjected to vari	· · · ·
3.	The cost associated with the defective products	•
4.	is the Japanese name to JIT.	
	e distinct meanings may be given to quality namely	– quality of design, quality of and
	quality of	
6.	TQM means	·
7.		'
a) form	of participative management b) HRD	technique
	em solving technique d) all of these	
8.	Membership of quality circle is	
a) voluntary9.		
	The Quality of the product means orightness b) fitness for use c) degree of perfections	
a) degree of b	d) fitness for Use at minimum cost	on at any cost
10.	Higher quality of conformance costs more, higher	or quality of decign costs less - say true or false
<u>PART – B</u>	Answer all questions (M	ax. 40 words) 5 x 2 = 10
1.	Define Inspection.	
2.	What is total Quality Management ?	
3.	What do you mean by total cost of quality?	
4.	Write the three dimensions of TQM.	
5.	What are the functions of ISO 9000 ?	
<u>PART – C</u> Answer any	six questions (Max. 100 words)	6 x 4 = 24
1.	Enumerate the various steps involved in launching	ng of Quality circle.
2.	What are the quality functions of Quality contro	
3.		are the benefits of ISO 9000 series of standards?
4.	Compare Quality of conformance and quality of	•
		ensuring proper quality of product and for ensuring
improvemen		
6.	What are the various elements and applications	
7.	What is quality audit? Name and describe the v	arious types of quality audits.
<u>PART – D</u>		
Answer any	y two questions (Max. 300 words)	2 x 8 = 16

Describe the basic organizational structure of Quality circles. Explain the role of quality circle member.

Define quality and its advantages and disadvantages.

1. 2.

3. What are the quality characteristics? How it can be classified explain with example? CENTRAL INSTITUTE OF PLASTICS ENGINEERING & TECHNOLOGY

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ACADEMIC CELL

SIXTH SEMESTER EXAMINATION – JUNE 2012

Duration	Duration : 3 Hours Course : DPT (First Semester) - 2010 Syllabus			Max. Marks: 60		
Course : DPT				Date : 26.06.2012		
Subject : Engineering Physics			Time	: 10.00 a.m. to 01.00 p.m.		
<u>PART – A</u>						
		Answer all qu	estions		10 x 1 = 10	
1.	The meter is the S.I unit of _	·				
a) Length	b) Mass		c) Tim	ie	d) Volume	
2.	Is work a Scalar or a Vector ?)				
3.	Name three physical quantit					
4.	The time of flight is	to the ti	me taken	to attain the r	naximum height.	
	a) equal b) t	hrice	c) twi	ce	d) none of these	
5.	a) equal b) t The S.I Unit of Reynold Num b) Newton	ber is	·			
a) joule	b) Newton		c) no	unit	d) Pascal.	
6.	The Mayor's Relation is b) $C_p+C_v=R$	·				
a) $C_p - C_v = R$				d) C	$_{p}+C_{v}=K$	
7.	At what temperature a body					
8.	The propulsion of a rocket is			n's	·	
a) First Law		aw c) Th		d) L	aw of Cooling	
9.	Which lens forms an inverted	d image of an obj				
a) Concave	b) Convex		-		d) Plano Concave	
10.	In Normal population, the nu		n the exci		than ground state.	
a) more	b) lo	ess		c) equal	d) zero	
<u>PART – B</u>						
	Ans	wer all questions	(Max. 40	words)	5 x 2 = 10	
1.	What is the Coherent System					
2.	Write the dimensional formu	ıla for the given b	elow.			
a) Co-E	fficient of Viscosity	b) Pr	essure	c) Energy	d) Force	
3.	What is Elastic Limit?					
4.	State specific heat of gas at o					
5.	What is a Reynold Number?					
<u>PART – C</u>						
	Ansv	wer any six questi	ions (Max	. 100 words)	6 x 4 = 24	
1.	Write a brief note on fundan					
2.	Show that for the free fall of a	oody, the sum of t	the mech	anical energy a	at any point in its path is	
constant.						
3.	What is a Projectile? Prove	·				
4.	Show that the value of surface tension is equal to surface energy.					
5.	Write a note on modes of he		•			
6.	Obtain the expression for the	•				
7.	Define: a) Critical A	ngle	b) Tot	al internal refle	ection	
<u>PART – D</u>						
Answer any t	wo questions (Max. 300 words	5)			2 x 8 = 16	
1. A cycli	ist starts from rest and accelera	ates at 1 m/s ² for	20 secono	ds. He then tra	avels with constant velocit	

- 1 minute and finally decelerates at 2.0 m/s² until he stops. Find his maximum velocity and the total distance travelled. 2. State and explain the experiment to verify the Newton's law of cooling.
- 3.
- Derive an expression for the maximum horizontal range in oblique projection.

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SUPPLEMENTARY EXAMINATION – JUNE 2012

Dura	tion :	3 Hours				
				Max.	Marks: 60	
		ird Semester)	- 2010 Syllabus	5		Date :
	5.2012					
Subje	ect : Plastics	Materials - II		05.00		
		Time	: 02.00 p.m. t	o 05.00 p.m.		
PART And	<u>– A</u> swer all ques	tions				10 x 1 = 10
,	orrer an ques					10 % 1 10
1.			ollowing plastic	s material is use	d in manufacturing of Compact D	
a) Po	olycarbonate				b) Polyphenyl	ene Oxide (PPO)
c) Po	olyamide				d) Poly Vinylic	dene Flouride
2.	P	TFE is self-ext	inguishing in na	ature - say true c	or false.	
3.	٧	Vhich of the fo	ollowing mater	ial is having the I	owest coefficient of friction?	
a) Po	olycarbonate					thylene (POM)
c) PE	ΕT				d) Pol	lytetraflouro ethylene
(PTFI	· = '					
4.		_	_	als in increasing o		
a) Po	olypropylene d) PTFE		b) Nylon 6		c) Polyoxymethylene	
5.	•	the following	plastics materi	ial is used for ma	nufacturing transparent shield us	sed by the policeman
?						
a) Po	olycarbonate		b) Nylon 6		c) Polyoxymethylene	
	d) Polypi	opylene				
6.	٧	Vhich of the fo	ollowing mater	ial is used in mar	nufacturing of X-ray films?	
a) Po	olycarbonate		b) PET		c) Liquid Crystalline Polymer	d) LDPE
7.	N	Iylon 66 is ma	anufactured by	using	&	monomers.
8.		raw the struc	ture of Polyeth	ylene terephthal	late and Polybutylene terephthala	ate.
9.	P	olyphenylene	sulphide (PPS)	is crystalline ma	terial - say true or false.	
10.		Natch the pair	s:			
<u>Plast</u>	<u>ic Material</u>			<u>Trade Name</u>		
a)	Polycarbo			i) Teflon		
b)	-	fluoroethylen	e	ii) Delrin		
iii) L	exan					
<u>PART</u>	<u>- В</u>					
Ans	wer all quest	tions (Max. 40	words)		5 x 2 = 10)
1.	0	raw structure	of PVF and giv	e one application	n of Poly vinyl fluoride (PVF).	
2.		efine Polyme	r Blend. Give o	ne example of m	iscible blend.	
3.	٧	Vhy Nylon 6 n	eeds pre-drying	g before process	ing ?	
4.	٧	Vhat are the c	haracteristics o	due to which Poly	vacetal are used in gear manufact	uring?
5.	Г	iscuss the pro	cessing behavi	ior of Polytetrafli	uoroethylene (PTFE).	

PART - C

Answer any six questions (Max. 100 words)

 $6 \times 4 = 24$

- 1. Write down the general characteristics and applications of Nylon 6.
- 2. Write down the properties and applications of Polyphenylene oxide (PPO).
- 3. Discuss the properties and applications of LCP.
- 4. Write down the properties and applications of Polyphenylenesulphide (PPS).
- 5. Discuss the properties and applications of PEEK.
- 6. What are the methods of polymer blending. What are the advantages of polymer blending?
- 7. What is need for Biodegradability in polymer and explain in detail?

PART - D

Answer any two questions (Max. 300 words)

 $2 \times 8 = 16$

- 1. Write short notes on any two of the following.
- a) Degradation in polymers

- b) Water Soluble Polymers
- c) Polyimide
- 2. Write in details manufacturing, properties and applications of Polycarbonate.
- 3. Discuss in detail the application of plastics materials in Automotive Industry.

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ACADEMIC CELL

SIXTH SEMESTER EXAMINATION – JUNE 2012

Duration	: 3 Hours	4.1.50	
Course DDT/		1arks: 60	
Course : DPT/	Date : 27.06.2012		
Subject · Main	tenance of Processing & Testing Machinery		Time : 10.00 a.m.
to 01.00 p.m.	teriance of Frocessing & Testing Machinery		11111e . 10.00 a.111.
PART – A			
Answer all qu	uestions		10 x 1 = 10
1.	Grease cannot be used as lubricant for central le	ubrication system - say true or f	alse.
2.	Define breakdown maintenance.		
3. Found	ation bolts are used to absorb mechanical vibration		-
4.	Circuit breakers are used to the ci	_).
make	b) control	c) break	
•	ne of these		
5.	Proximity limit switches can be		
	e b) capacitive type c) magnetic type	•	
6.	Radiation heaters are used for thermo forming	•	to a confolia
7.	On off controllers are superior than PID controll	•	true or faise.
8.	Mold closing speed can be controlled by changi	b) direction control valve	
pressure relief		d) none of these	
9.	The presence of air in hydraulic system can be d	•	
a) presence of		b) change in colour	·
	nd from release valve d) all of these	b) change in colour	
10.	Dynamic seals are used to stop internal leakage	in cylinder - say true or false.	
<u>PART – B</u>			
·	estions (Max. 40 words)	5 x 2 = 10)
1.	Explain function of solenoid in direction control	valve.	
2.	Explain confirming leveling for injection molding		
3.	Explain term alignment with respect mould sett	_	ne.
4.	Explain steps for checking heater.		
5.	What do you mean by SSR and EMR ?		
PART – C			
Answer any s	ix questions (Max. 100 words)	6 x 4	1 = 24
1.	Explain working of unbalanced vane pump with		
2.	Write a short note on ceramic band heaters use	ed in plastics industry.	
3.	Explain working of delay timers.		
4.	What is the function of mechanical iam har in in	niection molding machine?	

How pulleys of vee belt drive are aligned? What happen if pulleys are not aligned properly?

What are usual defects of gears in closed gear transmission system (gear Box)?

5.

6.

7.

Write a short note on oil seals.

- 1. Explain working of star delta starter with neat circuit diagram.
- 2. Write short notes on Preventive Maintenance and prepare a Preventive Maintenance schedule for injection molding machine.
- 3. With suitable diagram explain the working principle of Piston Pump and Screw Pump.

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ACADEMIC CELL

SIXTH SEMESTER EXAMINATION – JUNE 2012

Duration : 3 Hours		Max. Marks: 60
Course : DPT/PD-PT		Date : 28.06.2012
Subject : Costing & Industrial Management	Time	e: 10.00 a.m. to 01.00 p.m.
	PART – A	
Answer all questions		10 x 1 = 10
 Freedom of expression is also a type of motivate What are the three major elements of cost? MBO stands for 	d tool – say true or false.	
 Sensation and perception are same - say true of Self - actualizing people have more accurate percent. The purchase manager has the authority to decide. Attitude reflects the employee's feelings towards Margin = Sales x p/v ratio - say true or false. Values generally influence attitude and behavior type of lay 	ceptions about themselves de "what", "where", and "v s their job - say true of fals	when", to buy - say true or false. e.
	PART – B	
Answer all questions (Max. 40 words)	<u> </u>	5 x 2 = 10
 What are the different stages of product life cycl Explain the three types of discount. Define attitude. What is EOQ ? Define job enrichment. 		
Anguar any six quastions (May 100 words)	PART – C	6 v 4 – 24
Answer any six questions (Max. 100 words)		6 x 4 = 24
 Distinguish between the formal and informal cor Discuss the Maslow's theory of motivation. Give one example of the following: 	mmunication.	
 a) Variable cost b) Semi-variable cost 4. Explain the concept of ABC analysis. 5. Outline the duties of supervisor. 6. Explain 5's Programme of Total Quality Managen 	·	d) Uncontrollable cost.
7. What is the difference between formal and infor		
	PART – D	
Answer any two questions (Max. 300 words)		2 x 8 = 16
1. What do you understand by leadership style? Di	scuss the main styles of le	adership.

- 2. What is production, planning and control (PPC)? Explain the various techniques of production, planning and control.
- 3. Prepare a cost sheet for the period ended 31st March 2011.

 Cost of raw material 2,00,000, Productive wages 1,50,000, Indirect labor 10,000, Carriage inward 20,000, Other factory expenses 25,000, Office expenses 40,000, Public relation expenses 10,000, Expenses for testing the quality of goods 5,000, General Manager salary 30,000, Selling expenses 20,000, Profit 20% on total cost.
