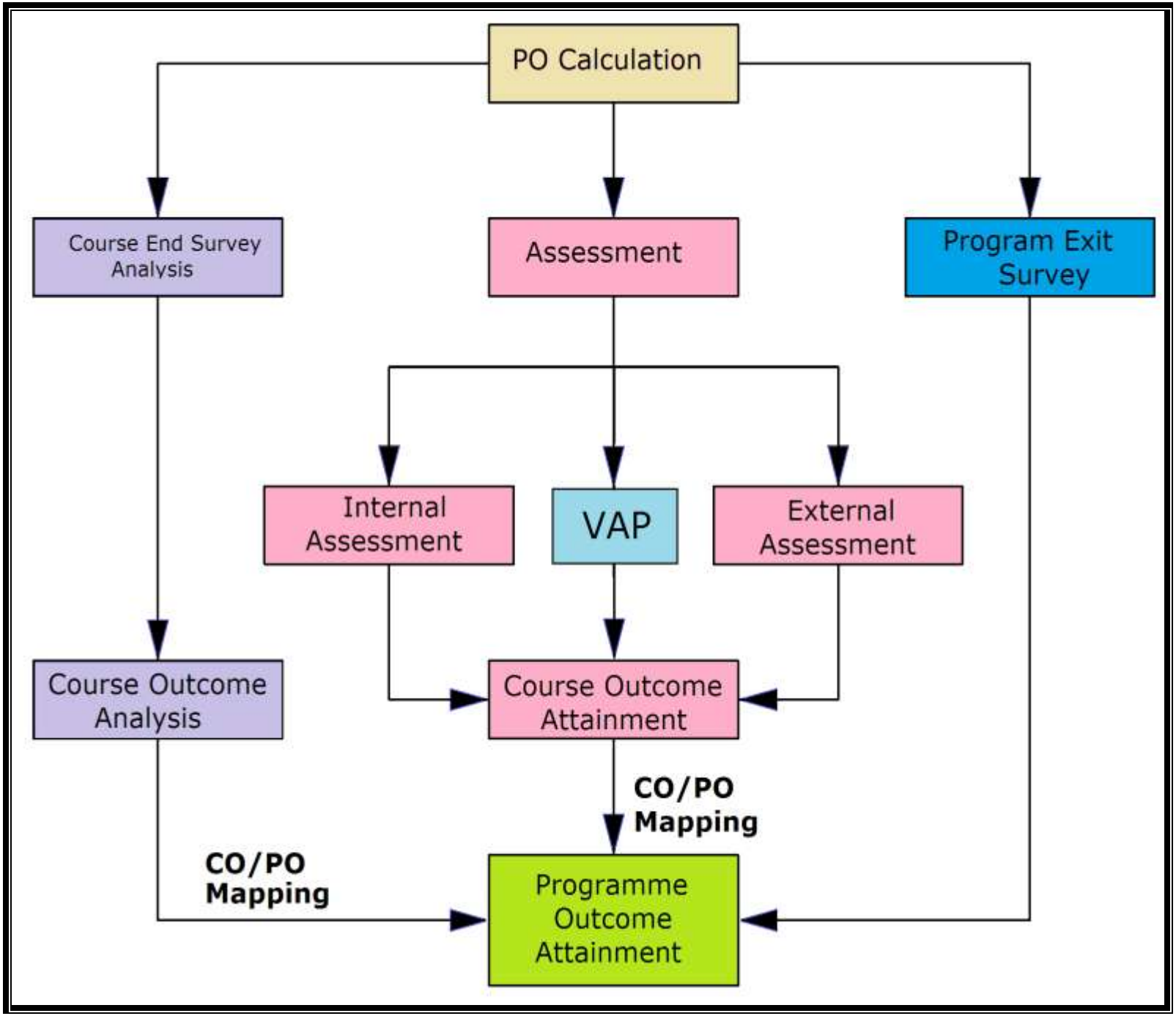
Attainment of program outcomes, program specific outcomes and course outcomes are evaluated by the institution

1. Course End Survey
2. Course End Survey Analysis
3. Course Outcome Analysis through Internal Assessments
4. Course Outcome Analysis through External Assessments
5. PO Statement
6. Programme Exit Survey

DGCT Programme Outcome (PO) attainment strategy



Sample Course End Survey Analysis

Sub Code & Name : ME6503-DESIGN OF MACHINE ELEMENTS

Name of the Staff : **Mr.N.PANNEERSELVAM SAP/Mech**

Year & Section : **III Year/ A**

Regilation : **2013**

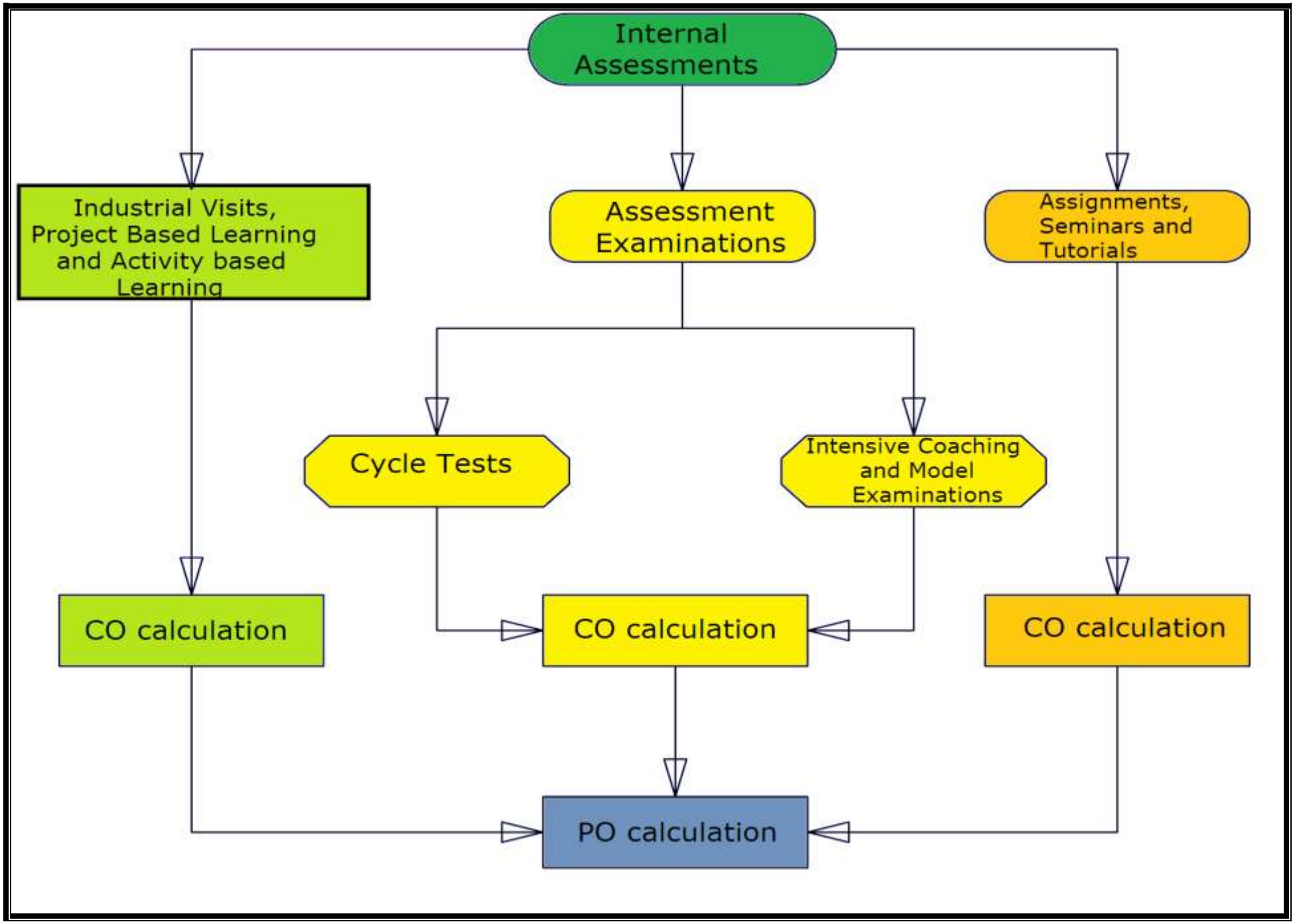
Consolidate Report

Cos	Course End Survey question	Marks out of 4	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	1. Can you design the elements like hook? Crank shaft etc.,	3.3	3.3			3.3	3.3		3.3						3.3		3.3
	2. Can you design a component is under varying load?																
CO2	3. Can you design the power transmission elements like shaft, coupling etc., used in industries?	3.0	3.0						3.0	3.0				3.0	3.0	3.0	3.0
CO3	4. Will you perform the Design & analysis of temporary and	**3.0**	3.0						3.0						3.0	3.0	3.0

	permanent joints ?																
CO4	**5. Are you confident about design & development of Energy storing elements like springs, flywheel etc.,?**	**2.7**	2.7	2.7	2.7				2.7				2.7		2.7	2.7	2.7
CO5	**6. Will you Design & analyze of tribological elements like bearing etc.,?**	**2.8**	2.8					2.8	2.8	2.8			2.8	2.8	2.8	2.8	2.8
CO6	**7. Will you follow the proper standards of design principle?**	**3.5**															
	8. Use of Power Point Projector (PPT) is class room lecturing is effective and appropriate ?	**3.0**															
	9. The evaluation methods used in this course are fair and appropriate	**3.2**															
	10. There is close agreement	**2.5**															

	between the course outcomes and what is actually covered															
Average		3.1	3.0	2.7	2.7	3.3	3.3	2.8	3.0	2.9			2.8	2.9	3.0	2.9	3.0
% of Attainment		76	74	67	67	81	81	71	74	73			69	73	74	72	74
% of Target		70	70	70	70	70	70	70	70	70			70	70	70	70	70
Justifiacation		+6	+4	-3	-3	+11	+11	+1	+4	+3			-1	+3	+4	+2	+4

INTERNAL ASSESSMENT



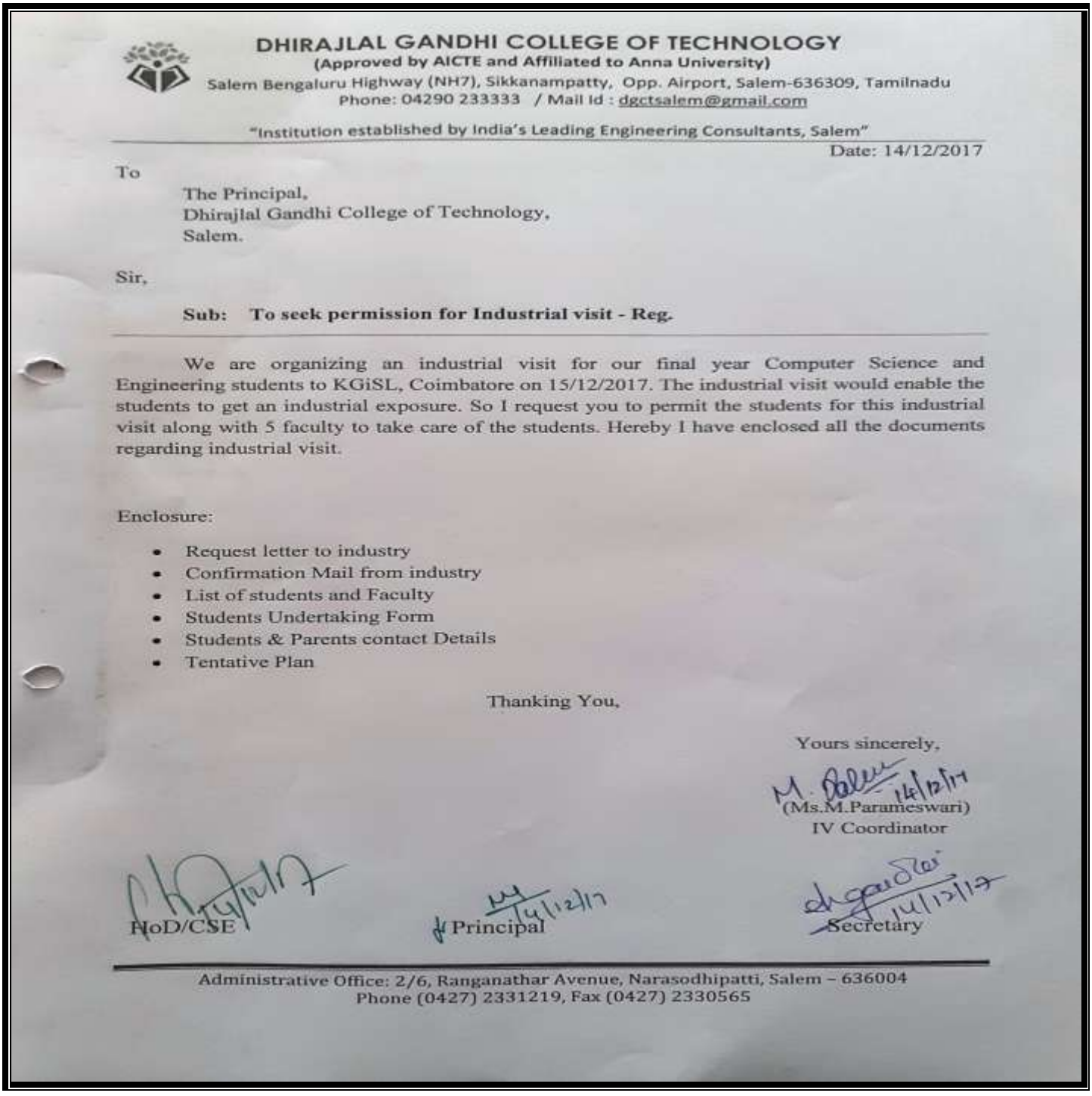
Dhirajlal Gandhi College of Technology,

Salem – 309

Industrial Visit

Computer Science and Engineering

Requistion for IV to the company



DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
(Approved by AICTE and Affiliated to Anna University)
Salem Bengaluru Highway (NH7), Sikkanampatty, Opp. Airport, Salem-636309, Tamilnadu
Phone: 04290 233333 / Mail Id : dgctsalem@gmail.com

"Institution established by India's Leading Engineering Consultants, Salem"

Date: 14/12/2017

To

The Principal,
Dhirajlal Gandhi College of Technology,
Salem.

Sir,

Sub: To seek permission for Industrial visit - Reg.

We are organizing an industrial visit for our final year Computer Science and Engineering students to KGiSL, Coimbatore on 15/12/2017. The industrial visit would enable the students to get an industrial exposure. So I request you to permit the students for this industrial visit along with 5 faculty to take care of the students. Hereby I have enclosed all the documents regarding industrial visit.

Enclosure:

- Request letter to industry
- Confirmation Mail from industry
- List of students and Faculty
- Students Undertaking Form
- Students & Parents contact Details
- Tentative Plan

Thanking You,

Yours sincerely,

14/12/17
(Ms.M.Parameswari)
IV Coordinator

HoD/CSE 14/12/17

Principal 14/12/17

Secretary 14/12/17

Administrative Office: 2/6, Ranganathar Avenue, Narasodhipatti, Salem – 636004
Phone (0427) 2331219, Fax (0427) 2330565

Dhirajlal Gandhi College of Technology,

Salem – 309

KG INFORMATION SYSTEMS PVT LTD KGiSL

KG Campus, Thudiyalur Road, Saravanampatti, COIMBATORE -35

Phone: 0422 4419999, Extn-9967, 9042068633

(Authorized Training Partners for Oracle/Red Hat Linux/Cisco)

To

M.Parameswari,AP/CSE,

IV coordinator,

Dhirajlal Gandhi College of Technology.

Salem.

Sub: Permission for your Visit

Respected Sir/Madam,

As per request, we permit the students from Dhirajlal Gandhi College of Technology to visit our premises on15/12/2017, Friday between 12.00 pm to 1.00pm.

Regards

Rathan,

KGISL

9042068633.

Dhirajlal Gandhi College of Technology,

Salem – 309

Dhirajlal Gandhi College of Technology,

Salem – 309

Computer Science and Engineering

Requistion for IV to the company

Gmail

Rubini rubini <rrubiniece88@gmail.com>

Fwd: Reg - Industrial visit
1 message

9/9/2019 Gmail - Fwd: Reg - Industrial visit

Mobile No:+91 9916044809

Land line : 0821 4002850 / 55

KAYNES TECHNOLOGY INDIA PVT. LTD.

23-25, Belagola Food Industrial Area.

Metagalli PO, Mysore-570016.

.....
.....
.....

.....
.....

From: pravin asokan [mailto:pravinasokan1199@gmail.com]
Sent: 07 September 2019 PM 03:51
To: naresh@kaynestechnology.net
Subject: Reg - Industrial visit

We the students of Dhirajlal Gandhi College of Technology would like to visit your company,KAYNES Technology on saturday 14-09- 2019.

There would be 35 visitors including 3 faculty members.We would like to visit in sector of Automotive.

Kindly grant permission for the visit.We look forward to your positive reply from your side.

Thanking You,

Yours Sincerely,

Pravin M

Dos Donts For Factory Visit.pdf
111K

Dhirajlal Gandhi College of Technology,

Salem – 309

Acceptance from the company

Gmail

Rubini rubini <rrubiniece88@gmail.com>

Fwd: Reg - Industrial visit
1 message

pravin asokan <pravinasokan1199@gmail.com> Mon, Sep 9, 2019 at 10:56 AM
To: rrubiniece88@gmail.com

-

Dear sir/madam

Based on your request and accepting to the terms, the Industrial visit to Kaynes Technology India Pvt Ltd, Mysore is confirmed.

We will be charge 100Rs per students

We are permitting Industrial Visit, to

KAYNES TECHNOLOGY INDIA PVT. LTD.,
23 -25, Belagola Food Industrial Area,
Metagalli PO, Mysore - 570 016
India

The schedule is given below;

14/09/2019 - 11:30 AM – 12:30 PM – KAYNES TECHNOLOGY

The dos and don'ts of factory visit is also attached. You may strictly adhere to the timings above and rules and regulations mentioned in the attachment.

You can contact me in any of the numbers below for any clarification.

Thanks and Regards

Naresh K

Dhirajlal Gandhi College of Technology,

Salem – 309

INDUSTRIAL VISIT-IV ECE B

Company Name : Kaynes Technology India Private Ltd
Venue : Mysore

Dhirajlal Gandhi College of Technology,

Salem – 309

Project Based Evaluation
Electronics and Communication Engineering

Project Name	: Piezo-smart Roads		Project title	: Spy Robot
Subject	: Optical Communication		Subject	**:** Robotics
Year / semester	: IV/VII		**Year / semester**	**: III/VI**
Student Name	: B.Samrethi Manojkumar		**Student Name**	**:** Gokula Kannan.M Gnanavel.S
Staff handled	: Mrs Syamala		**Staff handled**	**:** Mr.Karthik
				

Dhirajlal Gandhi College of Technology,

Salem – 309

Civil Engineering

Project Name	**: Fly ash Paver Block**		Project title	**: Layers of Flexible Pavement**
Subject	**: Construction Material**		Subject	**: Highway Engineering**
Year / semester	**II/IV**		**Year / semester**	**: III/VI**
Student Name	:NITHISH KUMAR E PRAKASH J PRATHAP A SUDHAKARAN R		**Student Name**	: PRIYADHARSHINI B NAVEENA K R INDHUMATHI V
Staff handled	: Mrs.M.Poornima		**Staff handled**	:Mrs R.Suganya
				

Dhirajlal Gandhi College of Technology,

Salem – 309

Electrical and Electronics Engineering

Project Title :	Hybrid Substation
Subject :	Transmission and Distribution
Year/Sem:	II/IV
Student Name:	1.M.Yogeswaran 2.K.Prabakaran 3.K.Praveen 4.M.Ranjith 5. P.Dhana sekar
Staff Handled:	Mr.P.Saravanakumar AP/EEE

Dhirajlal Gandhi College of Technology,

Salem – 309

INTERNAL ASSESSMENT

1. Sample questions, answer scripts, Marks statement and course outcome statement

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY,SALEM
Department of Mechanical Engineering

Year/Sem	**II/III**	**Time**	**2 Hrs**
Max.Marks	**60**	**Date**	23.07.19

CYCLE TEST-I

ME 8351- MANUFACTURING TECHNOLOGY-1

PART-A (Answer All Questions) **5X2=10 Marks**

1. Define the characteristics of core.
2. Compare the advantages of metal moulds over sand (expendable) moulds.
3. What is meant by CO_2 Process of moulding.
4. Generalize the properties of molding sand.
5. List out the casting defects occur due to improper ramming.
6. What are the functions of core?
7. Give the names of the alloys which are generally die cast. Why is aluminum alloys preferably cast in cold chamber die casting machines?
8. What is natural (Green) sand? State its constituents.
9. What is the cause of casting defect 'Hot tear and hot spots'
10. What is meant by Permanent mould casting?

PART-B **26 marks**

11 (a) (i) Classify the materials used for pattern making and write about them. (7)
(ii)What are the allowances given while making Pattern? Explain. (6) **13**

(or)

(b) Explain the construction and Working Cupola furnace with neat sketch. **13**

12 (a) (i) Enumerate the steps in sequence for producing Shell Moulding. (7)
(ii)Explain lost wax - Investment casting processes with neat sketch. (6) **6**

(or)

(b) (i) Describe the various properties required for the moulding sand. (5)
(ii) List out all the defects present casting. Explain any four with causes and remedies.(8) **13**

PART-C **14 marks**

13 (a) Chocolate is available in hollow shapes. What process is used to make these candies? **14**

(or)

(b) Describe the steps to select a suitable pattern, and explain the various stages in moulding process with neat sketches in order to produce the casting for the following diagram. **14**

Course Outcome	CO1	CO2	CO3	CO4	CO5	CO6
Question No.	1 to 13					
Marks allotted	60					

19/9/19.

Course Coordinator (N.Panneerselvam)
Module Coordinator (N.Panneerselvam)
HOD/Programme Coordinator (Dr.A.Selvaraj)

Dhirajlal Gandhi College of Technology,

Salem – 309

Dhirajlal Gandhi College of Technology

SALEM-636 309

Cycle Test - I

Name .... N. Saravanan ..... Roll No/ Reg No.... 61.05.18.114058 .....

Branch .... Mechanical Engineering ..... Semester..... 03 .....

Course Code & Name .... ME 8351 & MT - I ..... Date ... 23/07/2019 .....

Name of the Invigilator and Department	R. Kavitha
Invigilator's Signature	

Q.No	Part A										Part B				Part C		Total
	1	2	3	4	5	6	7	8	9	10	11		12		13		Max : 50
											a	b	a	b	a	b	
✓	2		1														49
Mark	2	2	1	2	2	2	2	1	2	2	11		5	8	11		60

Instruction to the candidate : Put a tick mark (✓) for the questions attended in the tick mark column against each question.

Course Outcome													
Question No	1	2	3	4	5	6	7	8	9	10	11	12	13
Marks Allotted	2	2	2	2	2	2	2	2	2	2	13	13	14
Marks Obtained	2	2	1	2	2	2	2	1	2	0	11	9	11

100 / 49

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
CT- 1 MARKS

Subject Code & Name: ME8351 - Manufacturing Technology - I
Subject Incharge : Mr.N.Panneerselvam, SAP/MECH

Date :23.07.2019

Sl. No	Register Number	Name of the Student	Marks out of 60	Marks out of 100
1	610518114001	AJITHKUMAR .S	14	23
2	610518114002	AMARNATH.M	24	40
3	610518114003	ANBARASU .S	18	30
4	610518114004	ARULMANI.E	19	32
5	610518114005	ARUNKUMAR.S	44	73
6	610518114006	BARATH.R	41	68
7	610518114007	BHARATHKUMAR.C.S.	35	58
8	610518114008	BHUVANESH.M	30	50
9	610518114009	BOOBALAN.S	9	15
10	610518114010	DEENADHAYALAN .P	AB	AB
11	610518114011	DEEPTHISHRIE.S	23	38
12	610518114012	DHANESH.M	43	72
13	610518114013	DHEENADHAYALAN.M	10	17
14	610518114014	DINESH.G	18	30
15	610518114015	DINESH.K	32	53
16	610518114016	FRANK JEEVARAJ.J	30	50
17	610518114017	GANESHKUMAR.M	38	63
18	610518114018	GOKUL.M	39	65
19	610518114019	GOKULAKRISHNAN.M	19	32
20	610518114021	GOKULNATH.M	5	8
21	610518114022	GOPINATH.S	24	40
22	610518114023	HARIGOKUL.V	33	55
23	610518114024	JAGATHEESHWARAN.S	32	53
24	610518114025	JAYANANTH.S	21	35
25	610518114026	JAYAPRAKASH.C	13	22
26	610518114027	KARTHIKEYAN .R	30	50
27	610518114028	KARTHIKEYAN.S	AB	AB
28	610518114029	KARUN.M	43	72
29	610518114030	KISHORE.B	17	28
30	610518114031	KOMAGAN.M.U	30	50
31	610518114032	LAKSHMINARAYANAN R.R	16	27
32	610518114033	MADHAVAN.S.G	AB	AB
33	610518114034	MALI ABHIJIT RAJARAM	21	35
34	610518114035	MANOJ V.M	34	57
35	610518114036	MANOJ KUMAR.S	15	25
36	610518114037	MANOJ PRABAKAR.K	34	57

Dhirajlal Gandhi College of Technology,

Salem – 309

		MOHAMAD ASARAF.J	AB	AB
37	610518114038	MOHAMMED SALMAAN .H	32	53
38	610518114039	MOHANAPRIYAN.M	31	52
39	610518114040	MOHANRAJ.S	AB	AB
40	610518114041	MURALI .M.P	36	60
41	610518114042	BHARATHRAJ. K		
42	LE	DHANRAJ.A.S		
43	LE	INTHIYAS.C		
44	LE	KAMALESH KUMAR .A		
45	LE	MOHAMED AJMAL.M		
46	LE	NOORUL . M		
47	LE	SANKAVI PREETHA.D.P		
48	LE	VISHNU BALA. S		
49	LE			
		Total no of Students		41
		Total no of absentees		5
		Total no of Presents		36
		Total no of Pass		19
		Total No of Fail		17
		Percentage of Pass		53%

STAFF INCHARGE/CLASS ADVISOR

HOD/MECH 27/12/13.

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
CT- 2 MARKS

ect Code & Name: ME8351 - Manufacturing Technology - I
ect Incharge : Mr.N.Panneerselvam, SAP/MECH

No	Register Number	Name of the Student	Marks out of 60	Marks out of 100
1	610518114001	AJITHKUMAR .S	18	30
2	610518114002	AMARNATH.M	44	73
3	610518114003	ANBARASU .S	37	62
4	610518114004	ARULMANI.E	30	50
5	610518114005	ARUNKUMAR.S	55	92
6	610518114006	BARATH.R	39	65
7	610518114007	BHARATHKUMAR.C.S.	43	72
8	610518114008	BHUVANESH.M	AB	AB
9	610518114009	BOOBALAN.S	22	37
10	610518114010	DEENADHAYALAN .P	AB	AB
11	610518114011	DEEPTHISHRIE.S	35	58
12	610518114012	DHANESH.M	37	62
13	610518114013	DHEENADHAYALAN.M	30	50
14	610518114014	DINESH.G	46	77
15	610518114015	DINESH.K	30	50
16	610518114016	FRANK JEEVARAJ.J	40	67
17	610518114017	GANESHKUMAR.M	36	60
18	610518114018	GOKUL.M	40	67
19	610518114019	GOKULAKRISHNAN.M	44	73
20	610518114021	GOKULNATH.M	32	53
21	610518114022	GOPINATH.S	30	50
22	610518114023	HARIGOKUL.V	15	25
23	610518114024	JAGATHEESHWARAN.S	40	67
24	610518114025	JAYANANTH.S	AB	AB
25	610518114026	JAYAPRAKASH.C	6	10
26	610518114027	KARTHIKEYAN .S	43	72
27	610518114028	KARTHIKEYAN.R	6	10
28	610518114029	KARUN.M	45	75
29	610518114030	KISHORE.B	35	58
30	610518114031	KOMAGAN.M.U	30	50
31	610518114032	LAKSHMINARAYANAN R.R	19	32

Dhirajlal Gandhi College of Technology,

Salem – 309

COURSE OUTCOME ANALYSIS

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
COURSE OUTCOMES

Subject Code & Name: ME8351 - Manufacturing Technology - I
Subject Incharge : Mr.N.Panneerselvam, SAP/MECH

DATE: 23.04.19

Sl. No	Register Number	Name of the Student	CO 1
1	610518114001	AJITHKUMAR .S	23
2	610518114002	AMARNATH.M	40
3	610518114003	ANBARASU .S	30
4	610518114004	ARULMANI.E	32
5	610518114005	ARUNKUMAR.S	73
6	610518114006	BARATH.R	68
7	610518114007	BHARATHKUMAR.C.S.	58
8	610518114008	BHUVANESH.M	50
9	610518114009	BOOBALAN.S	15
10	610518114010	DEENADHAYALAN .P	AB
11	610518114011	DEEPTHISHRIE.S	38
12	610518114012	DHANESH.M	72
13	610518114013	DHEENADHAYALAN.M	17
14	610518114014	DINESH.G	30
15	610518114015	DINESH.K	53
16	610518114016	FRANK JEEVARAJ.J	50
17	610518114017	GANESHKUMAR.M	63
18	610518114018	GOKUL.M	65
19	610518114019	GOKULAKRISHNAN.M	~~22~~ 63
20	610518114021	GOKULNATH.M	8
21	610518114022	GOPINATH.S	40
22	610518114023	HARIGOKUL.V	55
23	610518114024	JAGATHEESHWARAN.S	53
24	610518114025	JAYANANTH.S	35
25	610518114026	JAYAPRAKASH.C	22
26	610518114027	KARTHIKEYAN .R	50
27	610518114028	KARTHIKEYAN.S	AB
28	610518114029	KARUN.M	72
29	610518114030	KISHORE.B	28
30	610518114031	KOMAGAN.M.U	50
31	610518114032	LAKSHMINARAYANAN R.R	27
32	610518114033	MADHAVAN.S.G	AB
33	610518114034	MALI ABHIJIT RAJARAM	35
34	610518114035	MANOJ V.M	57
35	610518114036	MANOJ KUMAR.S	25
36	610518114037	MANOJ PRABAKAR.K	57
37	610518114038	MOHAMAD ASARAF.J	AB

Dhirajlal Gandhi College of Technology,

Salem – 309

38	610518114039	MOHAMMED SALMAAN .H	53
39	610518114040	MOHANAPRIYAN.M	52
40	610518114041	MOHANRAJ.S	AB
41	610518114042	MURALI .M.P	60
42	LE	BHARATHRAJ. K	NA
43	LE	DHANRAJ.A.S	NA
44	LE	INTHIYAS.C	NA
45	LE	KAMALESH KUMAR .A	NA
46	LE	MOHAMED AJMAL.M	NA
47	LE	NOORUL . M	NA
48	LE	SANKAVI PREETHA.D.P	NA
49	LE	VISHNU BALA. S	NA
		Total no of Students	41
		Total no of absentees	5
		Total no of Presents	36
		Total no of Pass	19
		Total No of Fail	17
		Percentage of Pass	53%

STAFF INCHARGE/CLASS ADVISOR

HOD/MECH 27/7/14

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY,SALEM
Department of Mechanical Engineering

Year/Sem II/III
Max.Marks 60

Time 2 Hrs
Date 20.08.19

CYCLE TEST-II

ME 8351- MANUFACTURING TECHNOLOGY-1

PART-A (Answer All Questions) **5X2=10 Marks**

1. Explain why shielding of weld area during welding is required
2. Define spelter and give the composition of some commonly used spelters
3. Explain the difference between soldering and brazing.
4. Differentiate between transferred and non transferred plasma arc welding.
5. Evaluate why spot welding is commonly used in automotive bodies and in large appliances.
6. Give the meaning of Nugget in Electric Resistance Welding.
7. Formulate the process parameters in FSW.
8. Examine the causes of Welding defects.
9. List the advantages of AC equipment over DC equipment in arc Welding.
10. Define the role flux in welding operation.

PART-B **26 marks**

11 (a) (i)Distinguish between Gas Welding and Arc Welding.(6)
(ii)Explain Thermit welding Process with neat sketch. (7) **13**

(or)

(b) (i)Distinguish between MIG and TIG Welding.(6) **13**
(ii)Briefly explain the principle of operation of Electron beam Welding with neat sketch.(7)

12 (a) (i)Explain about the equipment and operation of GTAW process. (7)
(i)Describe the process of Electro Slag Welding and mention their major application. (6) **13**

(or)

(b) (i)Explain the various types of oxy-acetylene flames with sketches. (6) **13**
(ii)Explain the Manual Metal Arc Welding Process with neat sketch.(7)

PART-C **14 marks**

13 (a) Summarize suitable NDT methods to examine welding defects. **14**

(or)

(b) How do you compare ac and dc arc welding? What are the advantages of each of the several sources of current for arc welding? What do you understand by the term "polarity" and what is the advantage/disadvantage of having different polarities? **14**

Course Outcome	CO1	CO2	CO3	CO4	CO5	CO6
Question No.		1 to 13				
Mark allotted		60				

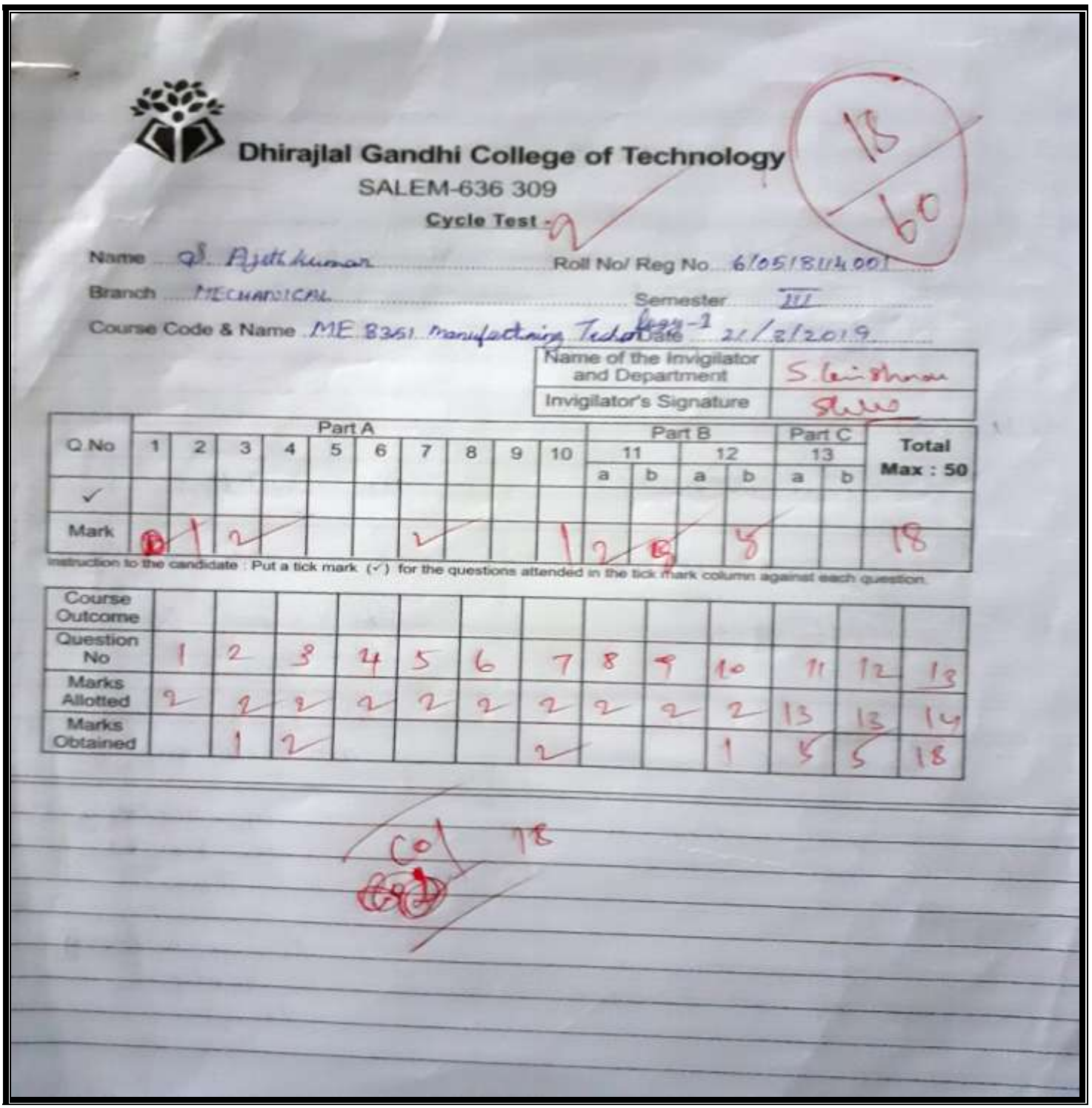
Course Coordinator (N.Panneerselvam)

Module Coordinator (N.Panneerselvam)

HOD/Programme Coordinator (Dr.A.Selvaraj)

Dhirajlal Gandhi College of Technology,

Salem – 309



Dhirajlal Gandhi College of Technology
SALEM-636 309

Cycle Test - 2

18/60

Name S. Ajith kumar Roll No/ Reg No 610518U4001

Branch MECHANICAL Semester III

Course Code & Name ME B351 Manufacturing Tech-I Date 21/2/2019

Name of the Invigilator and Department	S Karthikeyan
Invigilator's Signature	

Q.No	Part A										Part B				Part C		Total Max : 50
	1	2	3	4	5	6	7	8	9	10	11 a	11 b	12 a	12 b	13 a	13 b	
✓																	
Mark	0	1	2				2			1	2	13		8			18

Instruction to the candidate : Put a tick mark (✓) for the questions attended in the tick mark column against each question.

Course Outcome													
Question No	1	2	3	4	5	6	7	8	9	10	11	12	13
Marks Allotted	2	2	2	2	2	2	2	2	2	2	13	13	14
Marks Obtained		1	2				2			1	5	5	18

CO1 18

Dhirajlal Gandhi College of Technology,

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DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
CT- 2 MARKS

ect Code & Name: ME8351 - Manufacturing Technology - I
ect Incharge : Mr.N.Panneerselvam, SAP/MECH

No	Register Number	Name of the Student	Marks out of 60	Marks out of 100
1	610518114001	AJITHKUMAR .S	18	30
2	610518114002	AMARNATH.M	44	73
3	610518114003	ANBARASU .S	37	62
4	610518114004	ARULMANI.E	30	50
5	610518114005	ARUNKUMAR.S	55	92
6	610518114006	BARATH.R	39	65
7	610518114007	BHARATHKUMAR.C.S.	43	72
8	610518114008	BHUVANESH.M	AB	AB
9	610518114009	BOOBALAN.S	22	37
10	610518114010	DEENADHAYALAN .P	AB	AB
11	610518114011	DEEPTHISHRIE.S	35	58
12	610518114012	DHANESH.M	37	62
13	610518114013	DHEENADHAYALAN.M	30	50
14	610518114014	DINESH.G	46	77
15	610518114015	DINESH.K	30	50
16	610518114016	FRANK JEEVARAJ.J	40	67
17	610518114017	GANESHKUMAR.M	36	60
18	610518114018	GOKUL.M	40	67
19	610518114019	GOKULAKRISHNAN.M	44	73
20	610518114021	GOKULNATH.M	32	53
21	610518114022	GOPINATH.S	30	50
22	610518114023	HARIGOKUL.V	15	25
23	610518114024	JAGATHEESHWARAN.S	40	67
24	610518114025	JAYANANTH.S	AB	AB
25	610518114026	JAYAPRAKASH.C	6	10
26	610518114027	KARTHIKEYAN .S	43	72
27	610518114028	KARTHIKEYAN.R	6	10
28	610518114029	KARUN.M	45	75
29	610518114030	KISHORE.B	35	58
30	610518114031	KOMAGAN.M.U	30	50
31	610518114032	LAKSHMINARAYANAN R.R	19	32

Dhirajlal Gandhi College of Technology,

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		MADHAVAN.S.G	AB	AB
32	610518114033	MALI ABHIJIT RAJARAM	22	37
33	610518114034	MANOJ V.M	20	33
34	610518114035	MANOJ KUMAR.S	12	20
35	610518114036	MANOJ PRABAKAR.K	35	58
36	610518114037	MOHAMAD ASARAF.J	AB	AB
37	610518114038	MOHAMMED SALMAAN .H	41	68
38	610518114039	MOHANAPRIYAN.M	40	67
39	610518114040	MOHANRAJ.S	30	50
40	610518114041	MURALI .M.P	41	68
41	610518114042	BHARATHRAJ. K	30	50
42	LE	DHANRAJ.A.S	54	90
43	LE	INTHIYAS.C	33	55
44	LE	KAMALESH KUMAR .A	30	50
45	LE	MOHAMED AJMAL.M	6	10
46	LE	NOORUL . M	AB	AB
47	LE	SANKAVI PREETHA.D.P	30	50
48	LE	VISHNU BALA. S	31	52
49	LE	Total no of Students		49
		Total no of absentees		6
		Total no of Presents		43
		Total no of Pass		33
		Total No of Fail		10
		Percentage of Pass		77%

STAFF INCHARGE/CLASS ADVISOR

HOD/MECH

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
COURSE OUTCOME STATEMENT

Code & Name: ME8351 - Manufacturing Technology - I
charge : Mr.N.Panneerselvam, SAP/MECH

Register Number	Name of the Student	CO2 OUT OF 60	CO2 out of 100
610518114001	AJITHKUMAR .S	18	30
610518114002	AMARNATH.M	44	73
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610518114009	BOOBALAN.S	22	37
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610518114023	HARIGOKUL.V	15	25
610518114024	JAGATHEESHWARAN.S	40	67
610518114025	JAYANANTH.S	AB	AB
610518114026	JAYAPRAKASH.C	6	10
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610518114028	KARTHIKEYAN.R	6	10
610518114029	KARUN.M	45	75
610518114030	KISHORE.B	35	58
610518114031	KOMAGAN.M.U	30	50
610518114032	LAKSHMINARAYANAN R.R	19	32
610518114033	MADHAVAN.S.G	AB	AB
610518114034	MALI ABHIJIT RAJARAM	22	37
610518114035	MANOJ V.M	20	33
610518114036	MANOJ KUMAR.S	12	20

Dhirajlal Gandhi College of Technology,

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36	610518114037	MANOJ PRABAKAR.K	35	58
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STAFF INCHARGE/CLASS ADVISOR

HOD/MECH

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY,SALEM

Department of Mechanical Engineering

Sem II/III/A

Marks 100

Time 3 Hrs

Date 21.09.2019

INTENSIVE COACHING TEST - I

ME 8351- MANUFACTURING TECHNOLOGY-1

PART-A (Answer All Questions) **10X2=20Marks**

Distinguish between shape rolling and flat rolling?

Distinguish between forward hot extrusion and backward extrusion.

How can you reduce the roll force in rolling processes?

Differentiate between hot forging and cold forging.

What is meant by re-crystallization temperature?

Define lateral Extrusion.

Differentiate between redrawing and reverse drawing.

Analyze the term 'spring back' in sheet metal forming.

What is the effect of clearance in the punch and die forming for shearing sheet metal?

What is shear angle in sheet forming?

PART-B **5x13 = 65 marks**

a) (i) Explain hot working and cold working processes. **(6)**

(ii) Explain various forging operation **(7)**

(or)

b) (i) Discuss the types of Rolling mills. **(6)**

(ii) Explain process of making seamless tube. **(7)**

c) (i)Classify and write notes on various Rolling Stand Arrangement in detail. **(7)**

(ii) Explain Impression die forging process. **(6)**

(or)

d) (i) What are the types of power hammer available? Explain any two with neat sketch.

e) (i) Discuss blanking and punching with three processing phases. **(7)**

(ii) Discuss how the tubes for shaving cream/ tooth paste are produced. **(6)**

(or)

f) With neat diagram explain the process of forward extrusion and also explain how hollow sections can be produced in this process.

Dhirajlal Gandhi College of Technology,

Salem – 309

14	(a)	(i) Explain with a neat sketch the process of Rod Drawing.	(6)
		(ii) Analyze and Sketch variation in pressure during the Extrusion process by direct and indirect methods.	(7)
		(or)	
	(b)	Summarize the sheet metal characteristics.	(9)
		(i)Explain various sheet metal drawing operations with sketches.	(4)
15	(a)	(i) Explain the important factors of bending operation.	(6)
		(ii)Explain the different types of bending process.	(9)
		(or)	
	(b)	(i) How curvature are made in thin sheet metals, Discuss suitable process with neat sketch.	(8)
		(ii) Calculate minimum diameter of hole punched on a 5 mm thick plate with allowable shear strength and compressive strength are 180 N/mm^2 and 250N/mm^2 respectively. Determine the die size with clearance 0.25mm.	(5)

PART-C **15 marks**

16	(a)	With use simple sketches formulate the mathematical expression for the flat strip metal rolling process to calculate the rolling load.	15
		(or)	
	(b)	A 300 mm wide strip 25 mm thick is fed through a rolling mill with two powered rolls each of radius = 250 mm. the work thickness is to be reduced to 22 mm in one pas at a roll speed of 50 rev/min. the work material has a flow curve defined by K = 275 MPa and n = 0.15 and the coefficient of friction between the rolls and the work is assumed to be 0.12. Determine if the friction is sufficient to permit the rolling operation to be accomplished. If so, calculate the roll force, torque and horsepower.	15

Course Outcome	CO1	CO2	CO3	CO4	CO5	CO6
Question No.			1 to 5,11 to 14 & 16	6 to 10, 14 &15		
Marks allotted			77	36		

Course Coordinator
(N.Panneerselvam)

Module Coordinator
(N.Panneerselvam)

HOD/Programme Coordinator
(Dr.A.Selvaraj)

Dhirajlal Gandhi College of Technology,

Salem – 309

Reg.No:- 610618114066.
Subject:- / mt. - I.
Date:- 21/09/2019.
Depart/:- Mechanical engineering.
Year:- II - year / mech - B.

50/100

Intensive Coaching Test- I.

03-50

Part-A

(Answer all Questions).

1) Re-crystallization temperature:-

* It is defined as the minimum temperature at which the complete recrystallization of a metal takes place within a specific time. It is called as re-crystallization temperature.

2) Piercing:-

* Making a blind or through hole a with the help of a punch in the metal is known as piercing.

3) Angle of bite:-

* The angle established by the centre of the roll with radial forces in rolling operation is called angle of bite (or) Angle of contact.

5) Condition the before hot rolling:-

* The metal is conditioned before hot rolling. So that the metal may be rolled without any significant tendency, to crack.

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
ICT- 1 MARKS

Code & Name: ME8351 - Manufacturing Technology - I
Incharge : Mr.N.Panneerselvam, SAP/MECH

Register Number	Name of the Student	Marks out of 100	Marks out of 100
610518114001	AJITHKUMAR .S	OD	0
610518114002	AMARNATH.M	50	50
610518114003	ANBARASU .S	OD	0
610518114004	ARULMANI.E	OD	0
610518114005	ARUNKUMAR.S	71	71
610518114006	BARATH.R	64	64
610518114007	BHARATHKUMAR.C.S.	52	52
610518114008	BHUVANESH.M	50	50
610518114009	BOOBALAN.S	50	50
610518114010	DEENADHAYALAN .P	AB	0
610518114011	DEEPTHISHRIE.S	OD	0
610518114012	DHANESH.M	56	56
610518114013	DHEENADHAYALAN.M	50	50
610518114014	DINESH.G	AB	0
610518114015	DINESH.K	26	26
610518114016	FRANK JEEVARAJ.J	50	50
610518114017	GANESHKUMAR.M	AB	0
610518114018	GOKUL.M	52	52
610518114019	GOKULAKRISHNAN.M	66	66
610518114021	GOKULNATH.M	OD	0
610518114022	GOPINATH.S	OD	0
610518114023	HARIGOKUL.V	OD	0
610518114024	JAGATHEESHWARAN.S	OD	0
610518114025	JAYANANTH.S	OD	0
610518114026	JAYAPRAKASH.C	OD	0
610518114027	KARTHIKEYAN .S	60	60
610518114028	KARTHIKEYAN.R	AB	0
610518114029	KARUN.M	72	72
610518114030	KISHORE.B	31	31
610518114031	KOMAGAN.M.U	58	58
610518114032	LAKSHMINARAYANAN R.R	32	32

Dhirajlal Gandhi College of Technology,

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32	610518114033	MADHAVAN.S.G	AB	0
33	610518114034	MALI ABHIJIT RAJARAM	66	66
34	610518114035	MANOJ V.M	50	50
35	610518114036	MANOJ KUMAR.S	OD	0
36	610518114037	MANOJ PRABAKAR.K	OD	0
37	610518114038	MOHAMAD ASARAF.J	AB	0
38	610518114039	MOHAMMED SALMAAN .H	60	60
39	610518114040	MOHANAPRIYAN.M	50	50
40	610518114041	MOHANRAJ.S	AB	0
41	610518114042	MURALI .M.P	53	53
42	LE	BHARATHRAJ. K	AB	0
43	LE	DHANRAJ.A.S	AB	0
44	LE	INTHIYAS.C	AB	0
45	LE	KAMALESH KUMAR .A	19	19
46	LE	MOHAMED AJMAL.M	AB	0
47	LE	NOORUL . M	AB	0
48	LE	SANKAVI PREETHA.D.P	AB	0
49	LE	VISHNU BALA. S	71	71
		Total no of Students		49
		Total no of absentees		0
		Total no of Presents		49
		Total no of Pass		20
		Total No of Fail		29
		Percentage of Pass		41%

STAFF INCHARGE/CLASS ADVISOR

HOD/MECH

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
COURSE OUTCOME STATEMENT

ect Code & Name: ME8351 - Manufacturing Technology - I
ct Incharge : Mr.N.Panneerselvam, SAP/MECH

NO	Register Number	Name of the Student	CO3 Out of 100	CO4 out of 100
	610518114001	AJITHKUMAR .S	0	0
	610518114002	AMARNATH.M	50	50
	610518114003	ANBARASU .S	0	0
	610518114004	ARULMANI.E	0	0
	610518114005	ARUNKUMAR.S	71	71
	610518114006	BARATH.R	64	64
	610518114007	BHARATHKUMAR.C.S.	52	52
	610518114008	BHUVANESH.M	50	50
	610518114009	BOOBALAN.S	50	50
	610518114010	DEENADHAYALAN .P	0	0
	610518114011	DEEPTHISHRIE.S	0	0
	610518114012	DHANESH.M	56	56
	610518114013	DHEENADHAYALAN.M	50	50
	610518114014	DINESH.G	0	0
	610518114015	DINESH.K	26	26
	610518114016	FRANK JEEVARAJ.J	50	50
	610518114017	GANESHKUMAR.M	0	0
	610518114018	GOKUL.M	52	52
	610518114019	GOKULAKRISHNAN.M	66	66
	610518114021	GOKULNATH.M	0	0
	610518114022	GOPINATH.S	0	0
	610518114023	HARIGOKUL.V	0	0
	610518114024	JAGATHEESHWARAN.S	0	0
	610518114025	JAYANANTH.S	0	0
	610518114026	JAYAPRAKASH.C	60	60
	610518114027	KARTHIKEYAN .S	0	0
	610518114028	KARTHIKEYAN.R	72	72
	610518114029	KARUN.M	31	31
	610518114030	KISHORE.B	58	58
	610518114031	KOMAGAN.M.U	32	32
	610518114032	LAKSHMINARAYANAN R.R	0	0
	610518114033	MADHAVAN.S.G	66	66
	610518114034	MALI ABHIJIT RAJARAM	50	50
	610518114035	MANOJ V.M	0	0
	610518114036	MANOJ KUMAR.S		

Dhirajlal Gandhi College of Technology,

Salem – 309

		MANOJ PRABAKAR.K	0	0
36	610518114037	MOHAMAD ASARAF.J	0	0
37	610518114038	MOHAMMED SALMAAN .H	60	60
38	610518114039	MOHANAPRIYAN.M	50	50
39	610518114040	MOHANRAJ.S	0	0
40	610518114041	MURALI .M.P	53	53
41	610518114042	BHARATHRAJ. K	0	0
42	LE	DHANRAJ.A.S	0	0
43	LE	INTHIYAS.C	0	0
44	LE	KAMALESH KUMAR .A	19	19
45	LE	MOHAMED AJMAL.M	0	0
46	LE	NOORUL . M	0	0
47	LE	SANKAVI PREETHA.D.P	0	0
48	LE	VISHNU BALA. S	71	71
49	LE	Total no of Students		
		Total no of absentees		
		Total no of Presents		
		Total no of Pass		
		Total No of Fail		
		Percentage of Pass		

STAFF INCHARGE/CLASS ADVISOR

HOD/MECH

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY,SALEM

Department of Mechanical Engineering

Sem II/III/A

Marks 100 Time 3 Hrs

Date 03.10.2019

INTENSIVE COACHING TEST - II

ME 8351- MANUFACTURING TECHNOLOGY-1

PART-A (Answer All Questions) **10X2=20Marks**

rite any thermo-plastics used in industries.

ow homo-polymer is is different from Co-polymer?

efine thermo forming processes

hat are commonly used fillers?

ake short note on film blowing.

ve the comparison between Addition polymerization and condensation lymerization.

t out some Characteristics of plastic materials

nt out the industrial uses of fibres and filaments.

efine reinforced plastics and where is it applied.

me two adhesive that are used for adhesive bonding of plastics.

PART-B **5x13 = 65 marks**

a) List out the types of thermosetting plastics. Give characteristics and application of each one.

(or)

b) Discuss about a few Commercial Plastics.

c) (i) Differentiate between Thermo plastics and thermosetting plastics. (7)

(ii) State the purpose of the following plastics (6)

1.Plasticizers

2. Modifiers
3. Stabilizers
4. Solvents

(or)

Explain the rotational molding processes with neat sketch.

Explain the following (i) Film blowing (ii) bonding of thermo – plastics

(or)

Dhirajlal Gandhi College of Technology,

Salem – 309

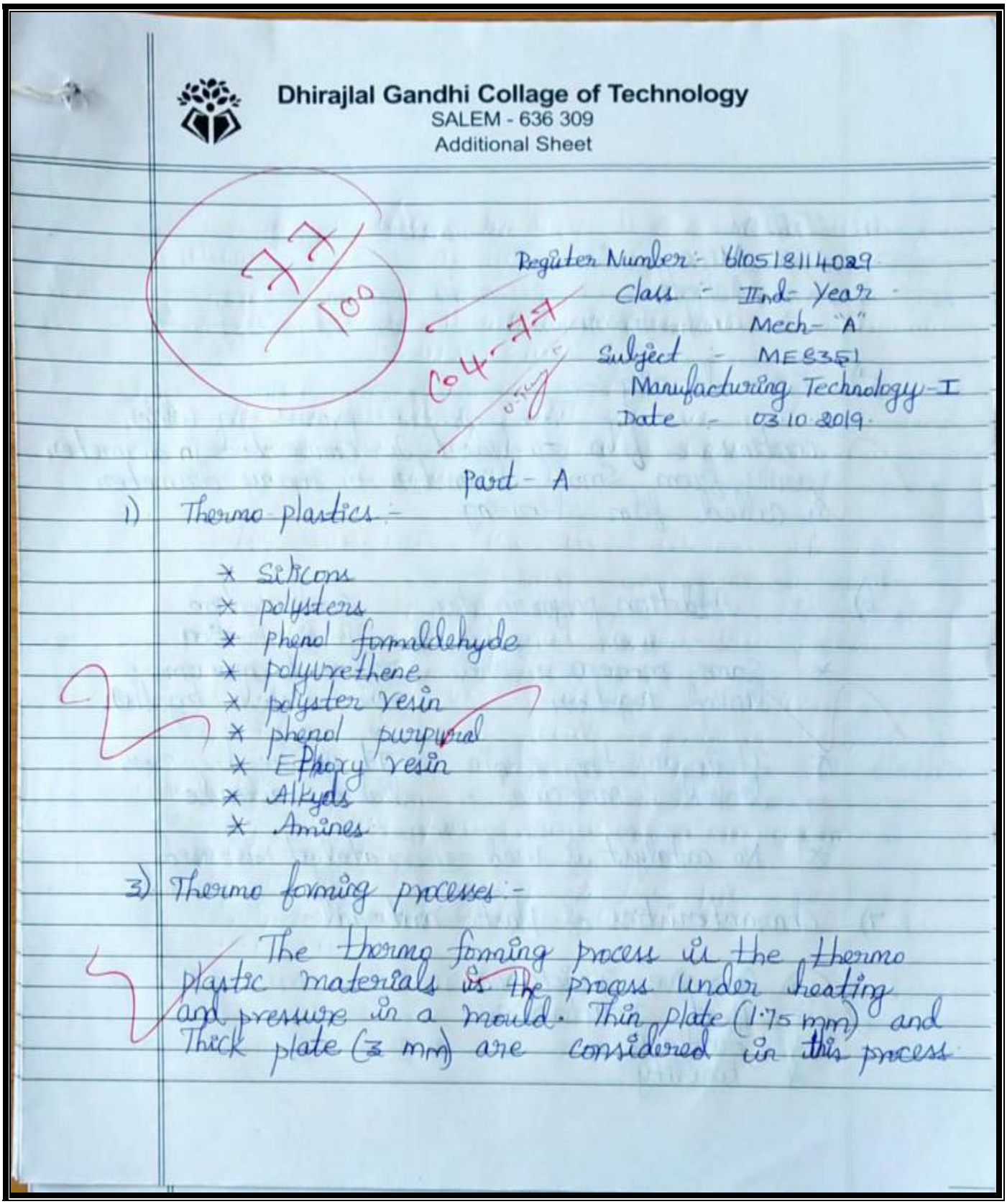
	(b)	(i) Explain vacuum thermoforming processes (7)	
		(ii) Describe blow molding processes(6)	
14	(a)	Explain about transfer molding with its advantages and limitations	
		(or)	
	(b)	With a suitable sketch, describe two types of injection molding process.	
15	(a)	Enumerate with neat sketch about solvent bonding.	
		(or)	
	(b)	Explain the Compression molding processes with neat sketch	
		PART-C	**15 marks**
16	(a)	Name and explain suitable processes for producing the barrel and plunger of syringe.	
		(or)	
	(b)	Recommend a suitable manufacturing process for producing plastic Bottles and plastic foot balls.	

Course Outcome	CO1	CO2	CO3	CO4	CO5	CO6
Question No.					1 to 16	
Marks allotted					100	

Course Coordinator
(N.Panneerselvam)

Module Coordinator
(N.Panneerselvam)

HOD/Programme Coordinator
(Dr.A.Selvaraj)



Dhirajlal Gandhi Collage of Technology
SALEM - 636 309
Additional Sheet

77/100

Register Number :- 610518114029
Class - IInd Year Mech - "A"
Subject - ME8351 Manufacturing Technology - I
Date - 03.10.2019

Part - A

1) Thermo plastics :-

* Silicons
* polysters
* phenol formaldehyde
* polyurethene
* polyster resin
* phenol purpural
* EPhoxy resin
* Alkyds
* Amines

3) Thermo forming processes :-

The thermo forming process is the thermo plastic materials is the progss under heating and pressure in a mould. Thin plate (1.75 mm) and Thick plate (3 mm) are considered in this process

Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
ICT- 2 MARKS

Code & Name: ME8351 - Manufacturing Technology - I
Incharge : Mr.N.Panneerselvam, SAP/MECH

Register Number	Name of the Student	Marks out of 100
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610518114015	DINESH.K	27
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610518114019	GOKULAKRISHNAN.M	AB
610518114021	GOKULNATH.M	AB
610518114022	GOPINATH.S	28
610518114023	HARIGOKUL.V	AB
610518114024	JAGATHEESHWARAN.S	23
610518114025	JAYANANTH.S	AB
610518114026	JAYAPRAKASH.C	AB
610518114027	KARTHIKEYAN .R	50
610518114028	KARTHIKEYAN.S	AB
610518114029	KARUN.M	77
610518114030	KISHORE.B	54
610518114031	KOMAGAN.M.U	51
610518114032	LAKSHMINARAYANAN R.R	17
610518114034	MALI ABHIJIT RAJARAM	27

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32	610518114035	MANOJ V.M	52
33	610518114036	MANOJ KUMAR.S	AB
34	610518114037	MANOJ PRABAKAR.K	50
35	610518114039	MOHAMMED SALMAAN .H	50
36	610518114040	MOHANAPRIYAN.M	51
37	610518114041	MOHANRAJ.S	AB
38	610518114042	MURALI .M.P	50
39	LE	BHARATHRAJ. K	51
40	LE	DHANRAJ.A.S	55
41	LE	INTHIYAS.C	51
42	LE	KAMALESH KUMAR .A	51
43	LE	MOHAMED AJMAL.M	AB
44	LE	NOORUL . M	AB
45	LE	SANKAVI PREETHA.D.P	38
46	LE	VISHNU BALA. S	50
		Total no of Students	41
		Total no of absentees	13
		Total no of Presents	28
		Total no of Pass	21
		Total No of Fail	7
		Percentage of Pass	75%

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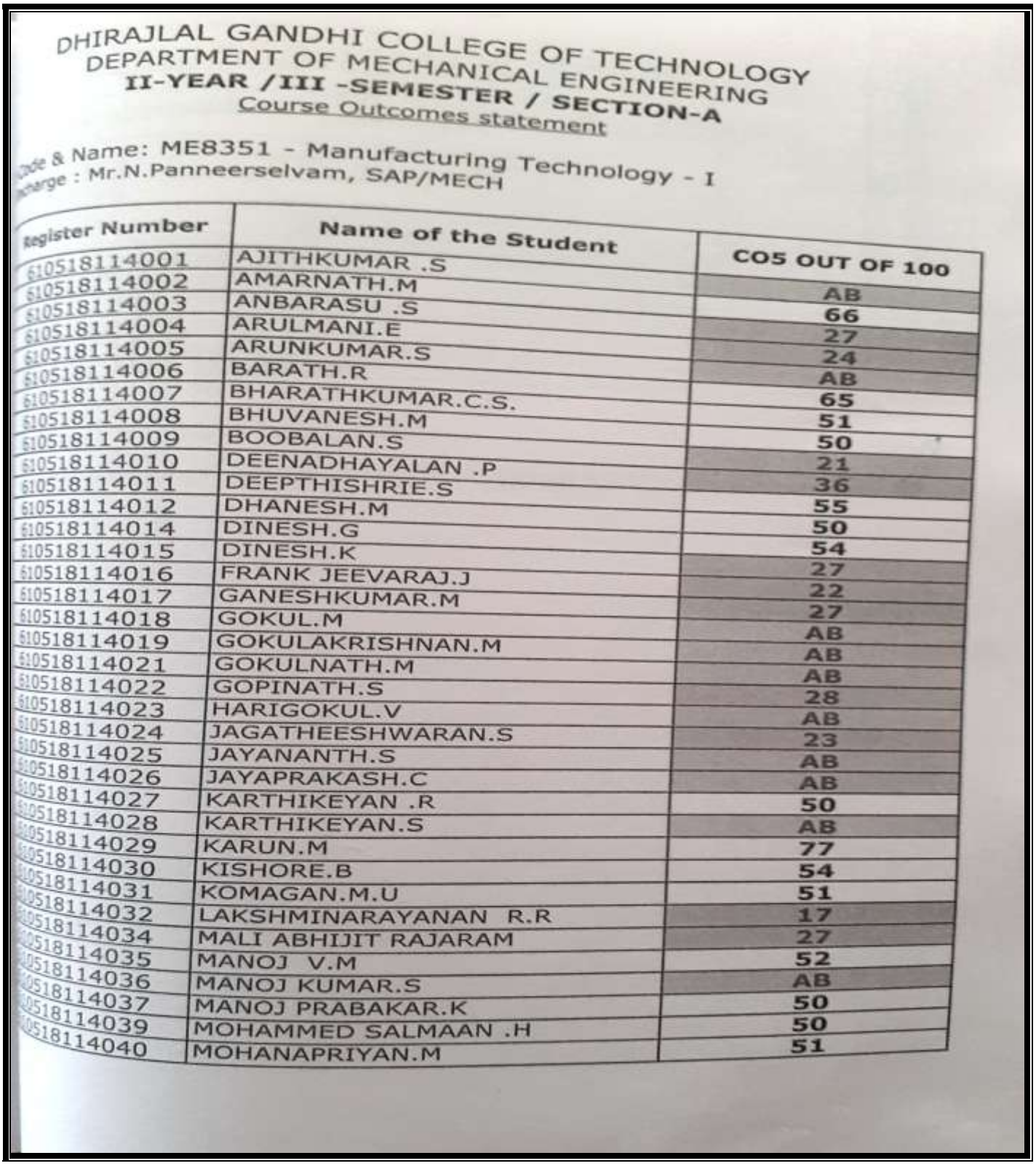

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
Course Outcomes statement

Code & Name: ME8351 - Manufacturing Technology - I
Incharge : Mr.N.Panneerselvam, SAP/MECH

Register Number	Name of the Student	CO5 OUT OF 100
610518114001	AJITHKUMAR .S	AB
610518114002	AMARNATH.M	66
610518114003	ANBARASU .S	27
610518114004	ARULMANI.E	24
610518114005	ARUNKUMAR.S	AB
610518114006	BARATH.R	65
610518114007	BHARATHKUMAR.C.S.	51
610518114008	BHUVANESH.M	50
610518114009	BOOBALAN.S	21
610518114010	DEENADHAYALAN .P	36
610518114011	DEEPTHISHRIE.S	55
610518114012	DHANESH.M	50
610518114014	DINESH.G	54
610518114015	DINESH.K	27
610518114016	FRANK JEEVARAJ.J	22
610518114017	GANESHKUMAR.M	27
610518114018	GOKUL.M	AB
610518114019	GOKULAKRISHNAN.M	AB
610518114021	GOKULNATH.M	AB
610518114022	GOPINATH.S	28
610518114023	HARIGOKUL.V	AB
610518114024	JAGATHEESHWARAN.S	23
610518114025	JAYANANTH.S	AB
610518114026	JAYAPRAKASH.C	AB
610518114027	KARTHIKEYAN .R	50
610518114028	KARTHIKEYAN.S	AB
610518114029	KARUN.M	77
610518114030	KISHORE.B	54
610518114031	KOMAGAN.M.U	51
610518114032	LAKSHMINARAYANAN R.R	17
610518114034	MALI ABHIJIT RAJARAM	27
610518114035	MANOJ V.M	52
610518114036	MANOJ KUMAR.S	AB
610518114037	MANOJ PRABAKAR.K	50
610518114039	MOHAMMED SALMAAN .H	50
610518114040	MOHANAPRIYAN.M	51

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37	610518114041	MOHANRAJ.S	AB
38	610518114042	MURALI .M.P	50
39	LE	BHARATHRAJ. K	51
40	LE	DHANRAJ.A.S	55
41	LE	INTHIYAS.C	51
42	LE	KAMALESH KUMAR .A	51
43	LE	MOHAMED AJMAL.M	AB
44	LE	NOORUL . M	AB
45	LE	SANKAVI PREETHA.D.P	38
46	LE	VISHNU BALA. S	50
		Total no of Students	49
		Total no of absentees	13
		Total no of Presents	36
		Total no of Pass	21
		Total No of Fail	15
		Percentage of Pass	5833%

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Dhirajlal Gandhi College of Technology,

Salem – 309

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY, SALEM
Department of Mechanical Engineering

Year/Sem: II/ III - A & B **Time:** 3 hrs
Max. Marks: 100 **Date:** 21.10.2019(AN)

MODEL EXAM
ME 8351 – MANUFACTURING TECHNOLOGY-1

PART - A (Answer All Questions) 10x2=20Marks

1. Define : Core
2. Generalize the properties of molding sand.
3. Name the types of flames used in gas welding.
4. Define: Friction stir welding.
5. Define: Recrystallisation temperature
6. Differentiate between hot and cold working.
7. Define spring back in sheet metal forming.
8. What is hydro forming process?
9. Define Elastomers.
10. Name two adhesive that are used for adhesive bonding of plastics.

PART-B 5x13=65 marks

11.a	(i)Explain about the allowances given while making Pattern?	(7)	
	(ii) Compare hot chamber and cold chamber die casting.	(6)	
	(Or)		13
11.b	(i)Explain lost wax - Investment casting processes with neat sketch	(7)	
	(ii)Describe any one type of Centrifugal casting with neat diagram	(6)	
12.a	(i)Describe the submerged arc welding process with neat diagram	(7)	
	(ii)Explain Thermit welding Process with neat sketch.	(6)	
	(Or)		13
12.b	Explain the types of resistance welding with neat sketches	(13)	
13.a	(i) Explain the steps involved in drop forging with neat sketches	(7)	
	(ii) Explain the Precision forging Process with neat sketch	(6)	
	(Or)		13
13.b	(i)Explain with a neat sketch the process of Rod Drawing.	(6)	
	(ii) Write short notes on impact extrusion and hydro static extrusion.	(7)	
14.a	(i)Explain Micro forming.	(7)	
	(ii) Describe Magnetic Pulse Forming with a neat sketch.	(6)	
	(Or)		13
14.b	Explain the different types of bending process.	(13)	
15.a	(i) Explain the Extrusion blow moulding process.	(7)	
	(ii) Describe the Blown-film Extrusion process.	(6)	
	(Or)		
15.b	(i) Explain any one type of injection moulding process.	(7)	13
	(ii) Explain transfer moulding. Discuss its advantages and limitations.	(6)	

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1x15=15 marks

PART-C

16.a Identify any 5 plastic components in your car, and explain the processes that could have been used in making them. 15

(Or)

16.b An increasing environmental concern is the long time required for degradation of polymers in landfills. Recommend the trends and developments in the production of biodegradable plastics. 15

Course Outcome	CO1	CO2	CO3	CO4	CO5
Question No.	1,2 & 11	3,4 & 12	5,6,13 & 16a	7,8 & 14	9,10,15 & 16b

Course Coordinator

Coordinator

HOD/Program Coordinator

Dhirajlal Gandhi College of Technology,

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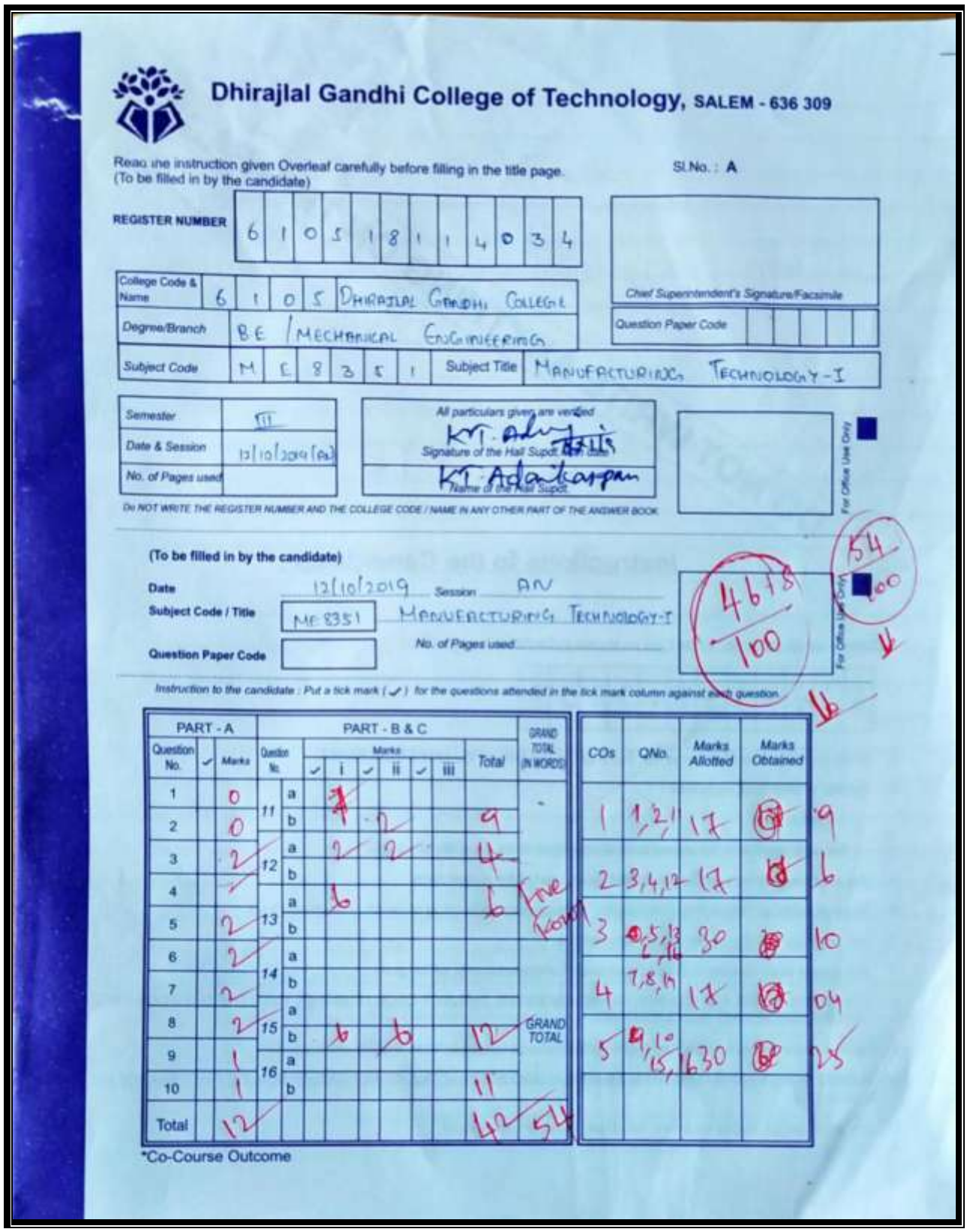

Dhirajlal Gandhi College of Technology, SALEM - 636 309

Read the instruction given Overleaf carefully before filling in the title page. (To be filled in by the candidate)

Sl.No. : A

REGISTER NUMBER: 6 1 0 5 1 8 1 1 4 0 3 4

Chief Superintendent's Signature/Facsimile

College Code & Name: 6 1 0 5 DHIRAJLAL GANDHI COLLEGE

Degree/Branch: B.E / MECHANICAL ENGINEERING

Question Paper Code:

Subject Code: M E 8 3 5 1 Subject Title: MANUFACTURING TECHNOLOGY-I

Semester: III

Date & Session: 12/10/2019 (AN)

No. of Pages used:

All particulars given are verified

Signature of the Hall Supdt with date

K.T. Adaikappan

Name of the Hall Supdt

For Office Use Only

DO NOT WRITE THE REGISTER NUMBER AND THE COLLEGE CODE / NAME IN ANY OTHER PART OF THE ANSWER BOOK

(To be filled in by the candidate)

Date: 12/10/2019 Session: AN

Subject Code / Title: ME 8351 MANUFACTURING TECHNOLOGY-I

Question Paper Code:

No. of Pages used:

46 1/2 / 100

54 / 100

For Office Use Only

Instruction to the candidate : Put a tick mark (✓) for the questions attended in the tick mark column against each question.

PART - A			PART - B & C								GRAND TOTAL (IN WORDS)
Question No.	✓	Marks	Question No.		✓	i	✓	ii	✓	iii	Total
1		0	11	a		7					
2		0		b		7		2			9
3		2	12	a		2		2			4
4		2		b							
5		2	13	a		6					6
6		2		b							
7		2	14	a							
8		2		b							
9		1	15	a							
10		1		b		6		6			12
Total		12	16	a							
				b							11
											42

Five Four

GRAND TOTAL: 54

COs	QNo.	Marks Allotted	Marks Obtained	
1	1, 2, 11	17	9	9
2	3, 4, 12	17	6	6
3	9, 5, 13, 6, 16	30	10	10
4	7, 8, 14	17	04	04
5	9, 10, 15, 16	30	25	25

*Co-Course Outcome

Dhirajlal Gandhi College of Technology,

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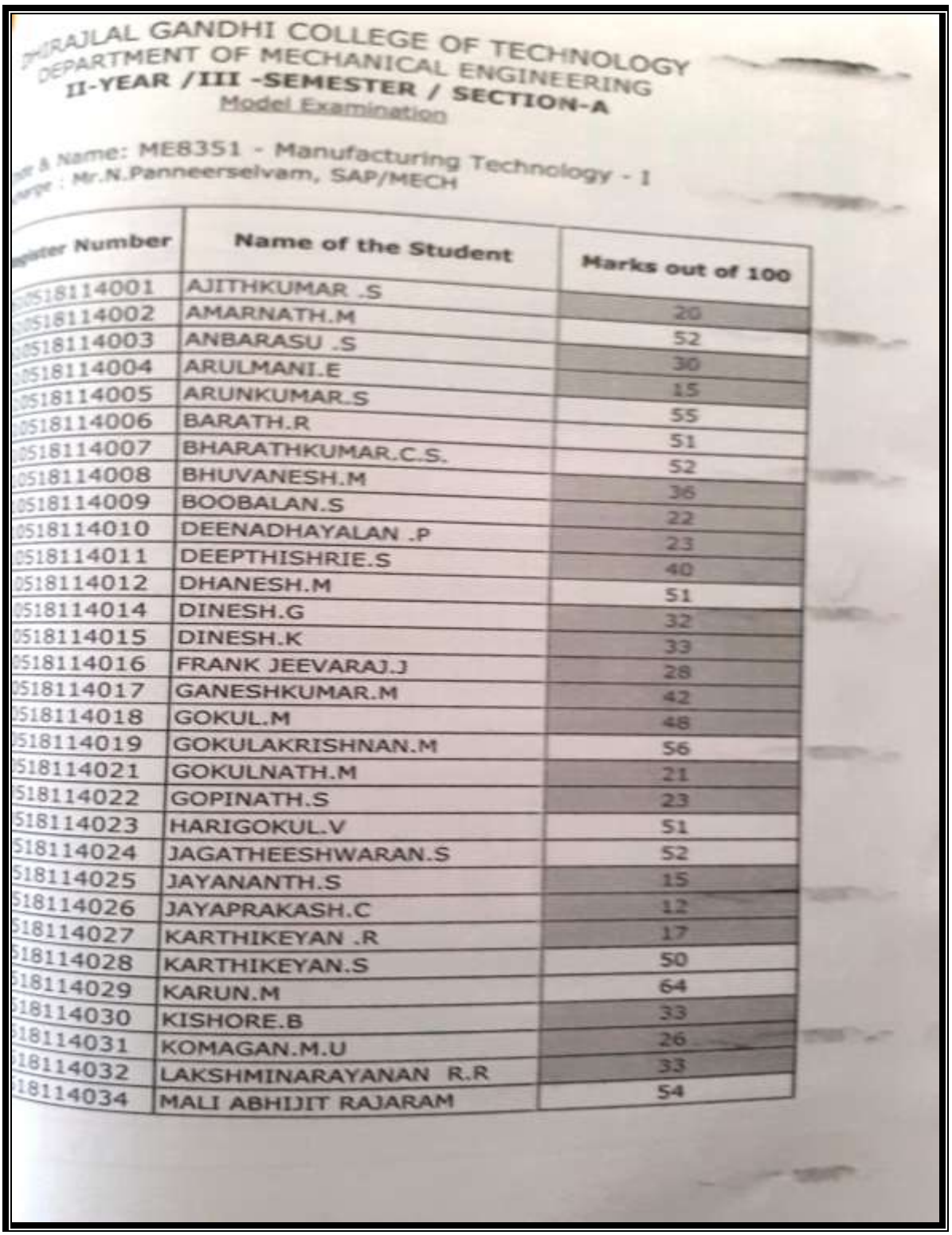

DHIRAJLAL GANDHI COLLEGE OF TECHNOLOGY
DEPARTMENT OF MECHANICAL ENGINEERING
II-YEAR /III -SEMESTER / SECTION-A
Model Examination

Name: ME8351 - Manufacturing Technology - I
Mr.N.Panneerselvam, SAP/MECH

Register Number	Name of the Student	Marks out of 100
0518114001	AJITHKUMAR .S	20
0518114002	AMARNATH.M	52
0518114003	ANBARASU .S	30
0518114004	ARULMANI.E	15
0518114005	ARUNKUMAR.S	55
0518114006	BARATH.R	51
0518114007	BHARATHKUMAR.C.S.	52
0518114008	BHUVANESH.M	36
0518114009	BOOBALAN.S	22
0518114010	DEENADHAYALAN .P	23
0518114011	DEEPTHISHRIE.S	40
0518114012	DHANESH.M	51
0518114014	DINESH.G	32
0518114015	DINESH.K	33
0518114016	FRANK JEEVARAJ.J	28
0518114017	GANESHKUMAR.M	42
0518114018	GOKUL.M	48
0518114019	GOKULAKRISHNAN.M	56
0518114021	GOKULNATH.M	21
0518114022	GOPINATH.S	23
0518114023	HARIGOKUL.V	51
0518114024	JAGATHEESHWARAN.S	52
0518114025	JAYANANTH.S	15
0518114026	JAYAPRAKASH.C	12
0518114027	KARTHIKEYAN .R	17
0518114028	KARTHIKEYAN.S	50
0518114029	KARUN.M	64
0518114030	KISHORE.B	33
0518114031	KOMAGAN.M.U	26
0518114032	LAKSHMINARAYANAN R.R	33
0518114034	MALI ABHIJIT RAJARAM	54

Dhirajlal Gandhi College of Technology,

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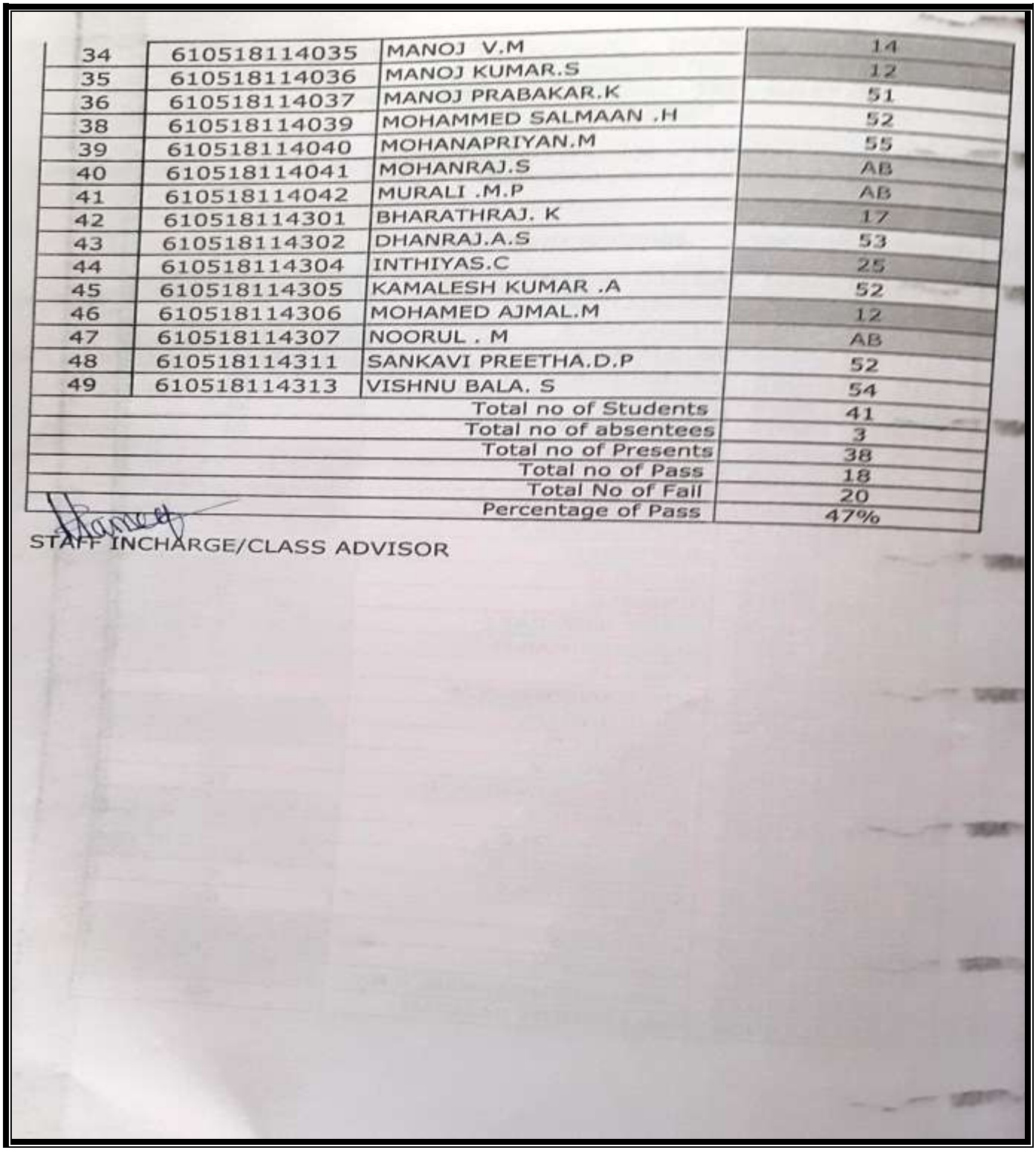

34	610518114035	MANOJ V.M	14
35	610518114036	MANOJ KUMAR.S	12
36	610518114037	MANOJ PRABAKAR.K	51
38	610518114039	MOHAMMED SALMAAN .H	52
39	610518114040	MOHANAPRIYAN.M	55
40	610518114041	MOHANRAJ.S	AB
41	610518114042	MURALI .M.P	AB
42	610518114301	BHARATHRAJ. K	17
43	610518114302	DHANRAJ.A.S	53
44	610518114304	INTHIYAS.C	25
45	610518114305	KAMALESH KUMAR .A	52
46	610518114306	MOHAMED AJMAL.M	12
47	610518114307	NOORUL . M	AB
48	610518114311	SANKAVI PREETHA.D.P	52
49	610518114313	VISHNU BALA. S	54
		Total no of Students	41
		Total no of absentees	3
		Total no of Presents	38
		Total no of Pass	18
		Total No of Fail	20
		Percentage of Pass	47%

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Salem – 309

ASSIGNMENT (Sample)

1 Various types of moulding sand used in moulding are:

1. Green sand.
2. Dry sand.
3. Facing sand.
4. Loam sand.
5. Backing sand.
6. Parting sand.

1. Green sand:

The sand which is in moist state is known as green sand. It contains 5 to 8% of water and 16 to 30% of clay. It can retain any shape and has good damping capacity. It is soft, light and porous. It is used for simple, small and medium size casting. The mould made out of this sand is called green sand mould.

2. Dry sand:

The moulding sand is prepared in dry stage. If the mould is formed by the dry sand it is called dry sand mould. Dry sand is used for making large casting. This mould does cause defects due to moisture. This mould has greater strength and rigidity. It is called skin dry mould.

3. Facing sand:

Mostly the facing sand is used directly to cover the surface of the pattern and comes contact with molten metal. It contains clay, talc, graphite, plumbago etc. Facing sand must have high refractoriness strength.

4. Loam sand:

Loam sand consists of fine silica sand, fine refractories, clay, graphite, fibre and wave contains as much as clay around 50%. Loam sand becomes hard when it is dried. It is for making large casting such as bell, roller, pulley etc.

5. Backing sand:

The sand which is used to back-up the facing sand and to fill the whole volume of mould box is called backing sand. The old sand may be repeatedly used for this purpose.

6. Parting sand:

Parting sand is usually applied when a casting is made up of two halves with cope and drag. To avoid the sticking of cope and drag. the parting sand is sprinkled over the parting surface of cope and drag. the parting sand is mixture of silica and brick powder. It is also sprinkled over the pattern to avoid sticking of green sand with the pattern.

Properties:

1. porosity or permeability:

permeability is a measure of moulding sand by which the sand allo the steam and gases to pass through it. when molten metal is poured into the mould, steam and gases are formed. due to moisture, binder and Additives present in the sand. If the sand if gases are not removed. Casting defects such as blow holes will occur. Even tho vent holes and Riser are provided all of these gases will not escape through it. To escape the remaining gases. In the absence of permeability the defects suc as surface blows, gas holes, etc may be experienced

(a) Quality and quantity of clays and quartz.

(b) Moisture content.

(c) Degree of compactness.

The following parameter which affects the permeability of moulding sand.

- If the clay content is less, the permeability of mould sand.
- If the grain size is larger the permeability will be more and vice versa.
- Soft ramming improves the permeability.
- Higher is the silica content on sand, lower will be permeability.

2. plasticity or flowability:

It is Ability of moulding sand to get compacted to a uniform density. Flowability assit the moulding sand to flow and pack all around the pattern and take up the Required shape thus it gives the shape of the pattern and Retains the shape after Removing the pattern. the property may be improved by adding clay and water to silica sand.

3. Adhesiveness:

This is the property moulding sand by which it sticks or adhere to another body. the moulding sand should cling or stick to the sides of moulding boxes. This property depends on the type and amount binder used in the sand mix. Addition of clay and moisture increase the adhesiveness.

4. Strength or cohesiveness:

It is the property of moulding sand by which it stick together. A moulding sand have sufficient strength so that the mortal does not collapse or get partially damage shifting, turning or pouring the molten metal. Because of pouring the molten metal cavity.

(a) Grain size and shape
(b) Moisture content.
(c) Density of sand after ramming.

5. Refactoriness:

This is the property of moulding sand to withsand the temperature of the molten to be poured so that it does not get cracked and fused with the metal or expansive any physical damage. Rough and large grain and quartz content in moulding sand Increases the Refractoriness poor Refractoriness will result the rough surface in casting.

6. collapsibility:

This is property of the moulding sand to decreases in volume to some extend under the compressive force developed by the shrinkage of metal during and subsequent cooling. this property permits the moulding sand to collapse easily after the casting solidifies if the mould or core does not collapse it may restrict the free contraction of the solidifying material and causes crack on the casting this property depend on amount of quartz and binders.

2 (i) Shrinkage Allowance:

The metal shirk on the solidification and contra further on cooling to room temperature to compensate it, the pattern is made larger than the required casting, this extra size provided on the pattern for metal shrinkage is called shrinkage Allowance. If it is not given the casting will become smaller after it is coo ~~for type~~.

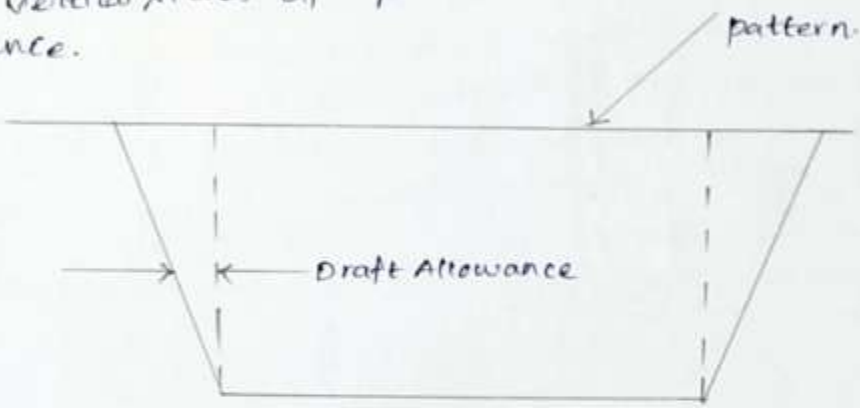
(ii) Machining or finishing Allowance:

All casting are to be machined to get the requ surface finish on the metal. During machining, some of the metals are removed from the casting. For the purpose the pattern is made larger than the required casting. this extra size given to the pattern for machining purpose is called machining or finis allowance.

The amount of finish allowance depends on the material of the casting, size of casting. Volume of production, method of moulding, configuration of the casting, method of machining degree of finishing etc. machining allowance is always larger for hand moulding. when compa to machine moulding.

(iii) Draft or Taper Allowance:

If the vertical faces of pattern are perpendicular to the parting line, the edge of mould may be damaged when the pattern is removed from the sand hence the vertical faces are made into taper for easy removal of pattern. this slight taper provided on the vertical sides of pattern is called draft allowance.



a) Height and size of pattern
b) moulding method, and
c) mould materials

The Common draft provided on the pattern 1° to 3°

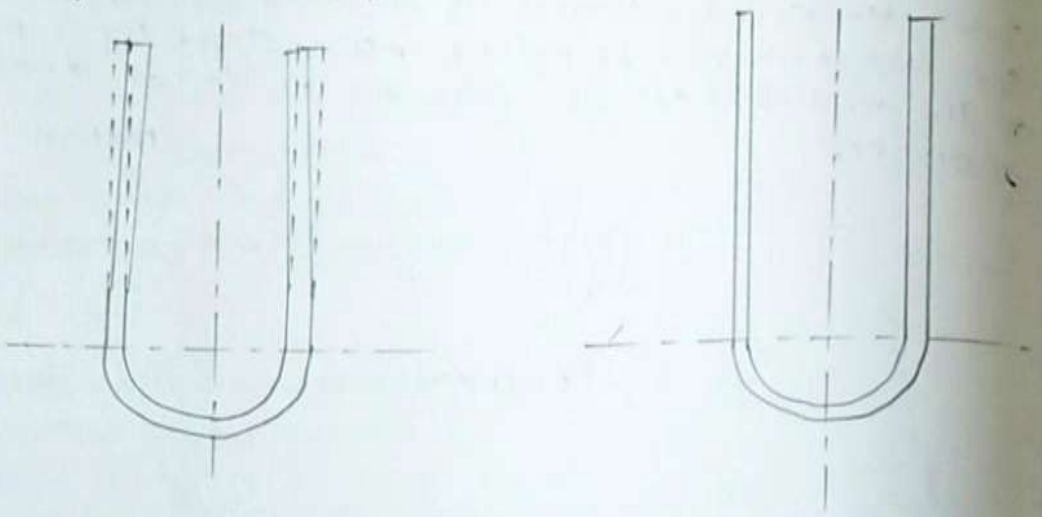
For taper on external surface 10 to 25 mm /m is provided.

For taper on internal surface 40 to 65 mm /m is provided.

(iv) Distortion or Chamber allowance:

The casting may be distort or warp during if it is an irregular shape flat long casting surface and a or V shape. All surface do not shrink uniformly the arms having unequal thickness are also the Reason for dimension. To avoid this, the shape of the pattern is slightly bent to the opposite direction. So the casting Neutralizes the Initial distortion given on the pattern and gets correct shape after cooling.

For example, a casting of "U" shape may distort and legs become divergent instead of being parallel. To avoid this, the legs are made convergent. the legs are become parallel after cooling.



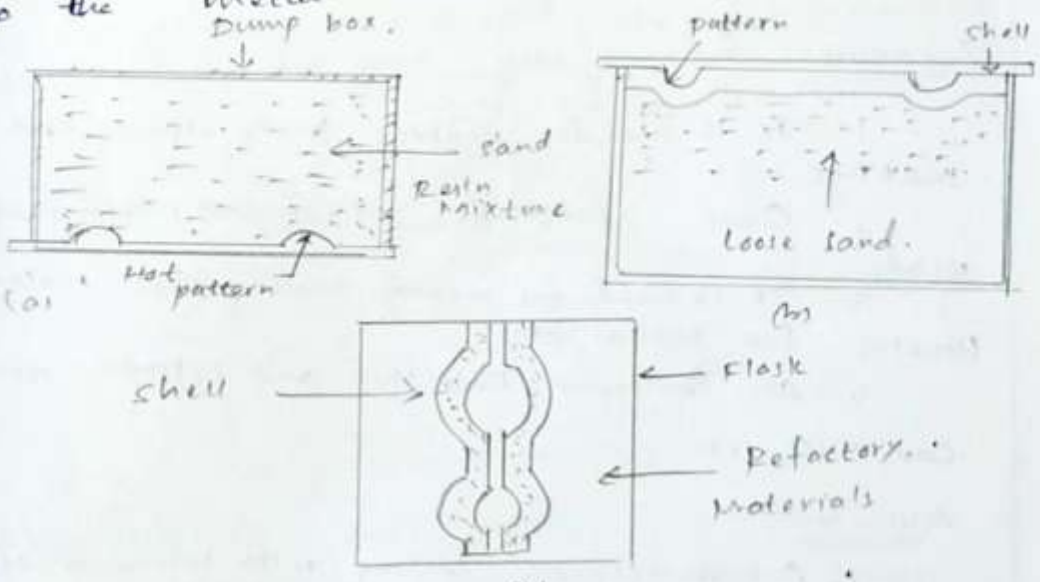
(VI) Rapping or shake Allowance:

To remove the pattern out of mould cavity. it is slightly rapped or shaked to detach it from the mould cavity. This is called Rapping. Due to Rapping the mould cavity may become large. to avoid this the pattern is made slightly smaller than the Required casting. This allowance given on the pattern is called Rapping or shake Allowance. As the allowance is subtracted from pattern dimension. It is known as negative allowar

3 Shell mould casting:

The shell mould casting is a semi precise method for producing small casting in large numbers The process Involves the use of a match plate pattern similar to cope and drag pattern which are used in green sand mould casting.

Initially the patterns are machined from copper alloys aluminium or cast iron depending upon the lift of the pattern. they made with usual allowance are polished surfaces then it is attached to the metal match plate



The mould material Contains 5 to 10% of phenolic Resin mixed with fine dry silica these are mixed with either dry oil or alcohols. It should that noted that there is no water used.

The tickness of the shell Can be accurately Controlled at the time of contact of be mixture with the heated pattern. In about 20-30 sec a normal shell thicknes of 6mm can be obtained

The extra sand which not adhered to the shell is Removed off - the thickness of the shell is depending on the Required strength and rigidity to hold the weight of the liquid metal to be poured into the mould.

The mould is heated in an oven at 200°c for 15-60sec this curving makes the shell rigid then it can be stripped off by means of ejector pins mounted on the pattern the formed shell constitutes one half of the metal.

Application:

1. It is used for making brake drums and bushings.
2. Cams, camshaft, piston and piston rings are made
3. It is used for making small pulleys motor Housing fan blades etc.
4. Air Compressor Reservoir and cylinders, crankcase Conveyor. etc.

Advantages:

1. A high accuracy casting with tolerance of ±0.00 to 0.005 mm/mm is possible
2. Good surface finish can be obtained
3. Complex parts can be made by this method.
4. Less sand is used compared to other methods.
5. moulds can be stored for long time
6. permeability of thin shell moulds is high defects are less. Better equality castings can be made

Cupola Construction:

> cupola essentially consists of a cylindrical steel shell lined on the inside with refractory bricks.

> The entire structure is supported on legs and is open at top and bottom when not in use

> At the bottom, doors are provided which can be closed and dropped to prepare a hearth for burning coke

> This Height decides may be less if the cupola is fitted with a Receiver and the metal is continously drained form the cupola

> About 50 to 150 mm above the slag hole are openings through the shell into the cupola shaft called tuyers

> These tuyers are provided around the shell in one or more Rows to provide a balanced supply of air.

> Air is supplied into the wind box from a blower pipes

> The cupola shaft extends further up from the wind box to a charging platform.

> The cupola shaft extends further up by arou 8 to 5 metre to give chimney effect for natural draft

> The other dimensions of the cupola are empirically based on melting area.

Working :

A typical operation cycle for a cupola would consist of closing and propping the bottom hinged doors and preparing a hearth bottom. The bottom is usually made from low strength moulding sand and sloped towards a tapping hole. A fire is started in the hearth using light weight timber coke is charged on the top of the fire and is burnt by Increasing the air draught. From the tuyers As the metal is melted and fuel consumed topped out into a waiting ladle or receiver, At the end of the melting campaign, charging is stopped but the air blast is maintained until all of the metal is melted and tapped off. the air is then turned off and the bottom doors opened allowing the residual charge material to be dumped.