DY PATIL
TECHNICAL CAMPUS
FACULTY OF ENGINEERING
TALSANDE

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Date : 27/09/2023

Circular

All the faculty members are here by informed that the Continuous Internal Evaluation (CIE) test – I of F.Y. and S.Y. B. Tech. Semester I and Continuous Internal Evaluation (CIE) test – II of T.Y. and Final Year B. Tech. Semester I for (2023-24) is scheduled from **11/10/2023 to 13/10/2023.**

The detailed time table of all above classes will be displayed soon.

Central Examination Coordinator

Dean Academics

Director

DY PATIL
TECHNICAL CAMPUS
FACULTY OF ENGINEERING
TALSANDE

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Date : 27/09/2023

Circular

All the faculty members are requested to submit question paper and model answer of Continuous Internal Evaluation (CIE) test – I of F.Y. and S.Y. B. Tech. Semester I and Continuous Internal Evaluation (CIE) test – II of T.Y. and Final Year B. Tech. Semester I for (2023-24) to your departmental coordinator on or before **07/10/2023 upto 12.00 noon.**

Exam is scheduled from **11/10/2023 to 13/10/2023**.The question paper should be of **30 marks and duration of 1 hour.**

Sr. No.	Name of Department	Name of Faculty
1	First year Engineering	Prof. R. M. Satpute
2	Civil Engineering	Prof. M. M. Rabade
3	Computer Science Engineering	Prof. S. M. More
4	Electrical Engineering	Prof. A. C. Daiv
5	Electronics & Telecommunication Engineering	Prof. S. Y. Kumbhar
6	Mechanical Engineering	Prof. N. B. Patil

Central Examination Coordinator

27/9/23
Dean Academics

27/09/2023
Director

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D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
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Date : 27/09/2023

Instructions to question paper setter

1. Question paper should be on minimum 40% to 50% syllabus of subject or as per Shivaji university guidelines.
2. The question paper should be of 30 marks.
3. Number of question should be Three.
4. Maximum beats in question paper should not more than Two (a & b), give optional question in beats.
5. Optional beats should not be more than 30% of total question.
6. Mention the course outcomes numbers in front of each question,
7. The course outcomes numbers for optional questions should be same.
8. Mention the Bloom's Taxonomy Level in front of each question
9. Please refer format of question paper.

Central Examination Coordinator

29/9/23
Dean Academics

27/09/2023
Director

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TALSANDE

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Department of _____ Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name				**Course Code**	
Day / Date				**Time**	
Class		**Division**		**Semester**	
Instructions				**Maximum Marks**	
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Que.		CO	BT Level	Max. Marks
1.	**Attempt the following questions.**			10
a.		ET301.1	L1	5
	OR			
a.		ET301.1	L1	5
b.			L2	
2.	**Attempt the following questions.**			10
a.		ET301.2	L2	5
b.		ET301.2	L3	5
	OR			
b.		ET301.2	L3	5
3.	**Attempt the following questions.**			10
a.		ET301.3	L2	5
b.		ET301.3	L3	5

Level	Skill Demonstrated	Question cues / Verbs for tests
1. Remember	• Ability to recall of information like facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria • ability to recall methodology and procedures, abstractions, principles, and theories in the field • knowledge of dates, events, places • mastery of subject matter	list, define, tell, describe, recite, recall, identify, show, label, tabulate, quote, name, who, when, where
2. Understand	• understanding information • grasp meaning • translate knowledge into new context • interpret facts, compare, contrast • order, group, infer causes • predict consequences	describe, explain, paraphrase, restate, associate, contrast, summarize, differentiate interpret, discuss
3. Apply	• use information • use methods, concepts, laws, theories in new situations • solve problems using required skills or knowledge • Demonstrating correct usage of a method or procedure	calculate, predict, apply, solve, illustrate, use, demonstrate, determine, model, experiment, show, examine, modify
4. Analyse	• break down a complex problem into parts • Identify the relationships and interaction between the different parts of a complex problem • identify the missing information, sometimes the redundant information and the contradictory information, if any	classify, outline, break down, categorize, analyze, diagram, illustrate, infer, select
5. Evaluate	• compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity • use of definite criteria for judgments	assess, decide, choose, rank, grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate
6. Create	• use old ideas to create new ones • Combine parts to make (new) whole, • generalize from given facts • relate knowledge from several areas • predict, draw conclusions	design, formulate, build, invent, create, compose, generate, derive, modify, develop, integrate

It may be noted that some of the verbs in the above table are associated with multiple Bloom's Taxonomy levels. These verbs are actions that could apply to different activities. We need to keep in mind that it's the skill, action or activity we need students to demonstrate that will determine the contextual meaning of the verb used in the assessment question.

3. Assessment Planning

While using Bloom's taxonomy framework in planning and designing of assessment of student learning, following points need to be considered:

1. Normally the first three learning levels; remembering, understanding and applying and to some extent fourth level analysing are assessed in the Continuous Internal Evaluation (CIE) and Semester End

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D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
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Date : 04/09/2023

Notice

All the students of T.Y. and Final year B Tech (2023-24) are here by informed that the Shivaji University, Kolhapur, Continuous Internal Evaluation (CIE) test – I of Semester I, will be conducted in offline and descriptive in nature from **14/09/2023 to 16/09/2023**.

It is necessary to be appeared for test, if you failed to attend then your assessment of 30 marks will not be possible and it leads to failure in examination.

The detailed time table of all above classes will be displayed soon.

Central Examination Coordinator

Dean Academics

Director

DY PATIL
TECHNICAL CAMPUS
FACULTY OF ENGINEERING
TALSANDE

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Date : 04/09/2023

Circular

All the faculty members are here by informed that the Continuous Internal Evalution (CIE) test – I of Semester I for (2023-24) is scheduled from **14/09/2023 to 16/09/2023.**

The detailed time table of all above classes will be displayed soon.

Central Examination Coordinator

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DY PATIL
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D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Date : 04/09/2023

Circular

All the faculty members of T.Y. and final year B Tech are requested to submit question paper and model answer of Continuous Internal Evaluation (CIE) test – I of Semester I for (2023-24) to your departmental coordinator on or before **11/09/2023 upto 12.00 noon**.

Exam is scheduled from **14/09/2023 to 16/09/2023**.The question paper should be of **30 marks and duration of 1 hour**.

Sr. No.	Name of Department	Name of Faculty
1	First year Engineering	Prof. R. M. Satpute
2	Civil Engineering	Prof. M. M. Rabade
3	Computer Science Engineering	Prof S. M. More
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Central Examination Coordinator

Dean Academics

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Date : 04/09/2023

Instructions to question paper setter

1. Question paper should be on minimum 40% to 50% syllabus of subject or as per Shivaji university guidelines.
2. The question paper should be of 30 marks.
3. Number of question should be Three.
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Central Examination Coordinator

Dean Academics

Director

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

DY PATIL TECHNICAL CAMPUS FACULTY OF ENGINEERING TALSANDE

Department of _____ Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name				**Course Code**	
Day / Date				**Time**	
Class		**Division**		**Semester**	
Instructions				**Maximum Marks**	
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
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Que.		CO	BT Level	Max. Marks
1.	**Attempt the following questions.**			10
a.		ET301.1	L1	5
	OR			
a.		ET301.1	L1	5
b.			L2	
2.	**Attempt the following questions.**			10
a.		ET301.2	L2	5
b.		ET301.2	L3	5
	OR			
b.		ET301.2	L3	5
3.	**Attempt the following questions.**			10
a.		ET301.3	L2	5
b.		ET301.3	L3	5

Level	Skill Demonstrated	Question cues / Verbs for tests
1. Remember	• Ability to recall of information like facts, conventions, definitions, jargon, technical terms, classifications, categories, and criteria • ability to recall methodology and procedures, abstractions, principles, and theories in the field • knowledge of dates, events, places • mastery of subject matter	list, define, tell, describe, recite, recall, identify, show, label, tabulate, quote, name, who, when, where
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5. Evaluate	• compare and discriminate between ideas • assess value of theories, presentations • make choices based on reasoned argument • verify value of evidence • recognize subjectivity • use of definite criteria for judgments	assess, decide, choose, rank, grade, test, measure, defend, recommend, convince, select, judge, support, conclude, argue, justify, compare, summarize, evaluate
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D Y Patil Education Society's
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Talsande -416 112 Dist: Kolhapur
(Approved by AICTE, New Delhi, Recognized by Government of Maharashtra & Affiliated to Shivaji University, Kolhapur)
(Accredited by NAAC 'A' Grade with 3.25 CGPA in First Cycle)

Date : 15/03/2024

Circular

All the faculty members of F.Y. and S.Y. B Tech are requested to submit question paper and model answer of Continuous Internal Evaluation (CIE) test – I of Semester II for (2023-24) to your departmental coordinator on or before **21/03/2024 upto 12.00 noon**.

Exam is scheduled from **26/03/2024 to 28/03/2024.** The question paper should be of **30 marks and duration of 1 hour**.

Sr. No.	Name of Department	Name of Faculty
1	First year Engineering	Prof. R. M. Satpute
2	Civil Engineering	Prof. M. M. Rabade
3	Computer Science Engineering	Prof. P. P. Bavane
4	Electrical Engineering	Prof. A. C. Daiv
5	Mechanical Engineering	Prof. N. B. Patil

Central Examination Coordinator

Dean Academics

15.03.2024
Director

D Y PATIL
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FACULTY OF MANAGEMENT
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D Y Patil Education Society's

D Y Patil Technical Campus

Faculty of Engineering & Faculty of Management

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Date : 15/03/2024

Circular

All the faculty members of F.Y. and S.Y. B Tech are here by informed that the Continuous Internal Evalution (CIE) test – I of Semester II for (2023-24) is scheduled from **26/03/2024 to 28/03/2024**.

The detailed time table of all above classes will be displayed soon.

Central Examination Coordinator

Dean Academics

Director

15.03.2024

D Y Patil Education Society's
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Faculty of Engineering & Faculty of Management
Talsande -416 112 Dist: Kolhapur
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Instructions to question paper setter

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Central Examination Coordinator

Dean Academics

Director

D Y PATIL TECHNICAL CAMPUS FACULTY of ENGINEERING FACULTY of MANAGEMENT TALSANDE

D Y Patil Education Society's

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Faculty of Engineering & Faculty of Management

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(Accredited by NAAC 'A' Grade with 3.25 CGPA in First Cycle)

Department of _____Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name				**Course Code**	
Day / Date				**Time**	
Class		**Division**		**Semester**	
Instructions				**Maximum Marks**	
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Que.		CO	BT Level	Max. Marks
1.	**Attempt the following questions.**			**10**
a.		**ET301.1**	**L1**	**5**
	OR			
a.		**ET301.1**	**L1**	**5**
b.			**L2**	
2.	**Attempt the following questions.**			**10**
a.		**ET301.2**	**L2**	**5**
b.		**ET301.2**	**L3**	**5**
	OR			
b.		**ET301.2**	**L3**	**5**
3.	**Attempt the following questions.**			**10**
a.		**ET301.3**	**L2**	**5**
b.		**ET301.3**	**L3**	**5**

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FACULTY of MANAGEMENT
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(Accredited by NAAC 'A' Grade with 3.25 CGPA in First Cycle)

Date : 28/03/2024

Circular

All the faculty members of T.Y. and Final year B Tech are requested to submit question paper and model answer of Continuous Internal Evaluation (CIE) test – II of Semester II for (2023-24) to your departmental coordinator on or before **04/04/2024 upto 12.00 noon**.

Exam is scheduled on **08/04/2024, 10/04/2024 and 12/04/2024.** The question paper should be of **30 marks and duration of 1 hour**.

Sr. No.	Name of Department	Name of Faculty
1	Civil Engineering	Prof. M. M. Rabade
2	Computer Science Engineering	Prof. P. P. Bavane
3	Electrical Engineering	Prof. A. C. Daiv
4	Electronics & Telecommunication Engineering	Prof. S. Y. Kumbhar
5	Mechanical Engineering	Prof. N. B. Patil

Central Examination Coordinator

Dean Academics

Director

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D Y Patil Education Society's

D Y Patil Technical Campus

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(Accredited by NAAC 'A' Grade with 3.25 CGPA in First Cycle)

Date : 28/03/2024

Circular

All the faculty members of T.Y. and Final year B Tech are here by informed that the Continuous Internal Evalution (CIE) test – II of Semester II for (2023-24) is scheduled on 08/04/2024, 10/04/2024 and 12/04/2024.

The detailed time table of all above classes will be displayed soon.

Mondale.
Central Examination Coordinator

Dean Academics

Satish
28/03/2024
Director

Instructions to question paper setter

1. Question paper should be on minimum 40% to 50% syllabus of subject or as per Shivaji university guidelines.
2. The question paper should be of 30 marks.
3. Number of question should be Three.
4. Maximum beats in question paper should not more than Two (a & b), give optional question in beats.
5. Optional beats should not be more than 30% of total question.
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7. The course outcomes numbers for optional questions should be same.
8. Mention the Bloom's Taxonomy Level in front of each question
9. Please refer format of question paper.

Central Examination Coordinator

Dean Academics

Director

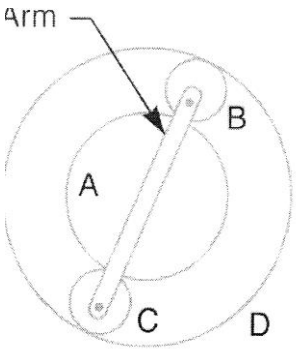
D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Department of Mechanical Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name	Theory of Machine II			Course Code	PCC ME 302
Day / Date				Time	
Class	T.Y. B. Tech	Division		Semester	VII
Instructions				Maximum Marks	30
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Q.1)	Attempt the following questions	CO	BT Level	Max. Marks
a)	Explain the gear terminology with neat sketch.	ME302.1	L2	04
	OR			
a)	Explain the interference phenomenon in involute gears.	ME302.1	L2	04
b)	The number of teeth on each of the two equal spur gears in mesh are 40. The teeth have 20° involute profile and the module is 6 mm. If the arc of contact is 1.75 times the circular pitch, find the addendum.	ME302.1	L3	08
Q.2)	**Attempt the following questions**			
a)	An epicyclic train of gears is arranged as shown in Fig. How many revolutions does the arm, to which the pinions B and C are attached, revolutions clockwise and D makes half a revolution anticlockwise, When A makes one revolution clockwise and D is stationary? The number of teeth on the gears A and D are 40 and 90 respectively. 	ME302.1	L3	08
Q.3)	**Attempt the following questions**			
a)	Write a note on gyroscope.	ME302.2	L2	05
	OR			
a)	Draw gyroscopic couple figure and define the following terms: Axis of spin, precessional angular motion and axis	ME302.2	L2	05

	of precession.			
b)	An aeroplane makes a complete half circle of 50 meter radius towards left, when flying at 200 km per hr. The rotary engine and the propeller of the plane has a mass of 400 kg and a radius of gyration of 0.3 m. The engine rotates at 2400 rpm clockwise when viewed from the rear. Find the gyroscopic couple on the aircraft and state its effect on it.	**ME302.2**	**L3**	**05**

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Department of Mechanical Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name	Manufacturing Engineering	Course Code	ME305
Day / Date	14/09/2023	Time	1.30-2.30 PM
Class	T.Y Btech Mechanical	Semester	VI
Instructions		Maximum Marks	30
1	*All Questions are Compulsory*		
2	*Figures to right indicated full marks*		
3	*Draw neat and labelled sketch wherever necessary*		

Que.		CO	BT Level	Max. Marks
1.	**Attempt the following questions.**			
a.	Differentiate clearly between orthogonal and oblique cutting operation with neat sketch	M305.1	L1	5
b.	Explain different types of chips and labelled diagram	M305.1	L2	5
	OR			
c	Derive & Expression for shear strain	M305.1	L4	5
2.	**Attempt the following questions.**			
a.	Define tool life, discuss various factor affecting tool life.	M305.1	L6	5
b.	Explain Different types of tool material & list important properties of tool material	M305.1	L2	5
	OR			
c	Explain Tool geometry of Reamer with neat sketch	M305.1	L6	5
3.	**Attempt the following questions.**			
a.	Compare orthogonal cutting Vs Oblique cutting	M305.1	L2	5
b.	Define Machinability, explain the factor affecting machinability	M305.1	L3	5
	OR			
c	Discuss Factor affecting tool life	M305.1	L2	5

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

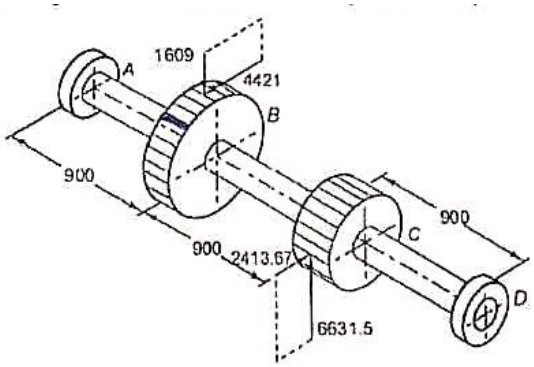
Internal Evaluation Test No.1 A.Y 2023-24

Course Name	**Machine Design-I**			**Course Code**	PCC-ME-304
Day & Date:	Saturday 16/09/2023			**Time**	9.00 to 10.00 am
Class	TY Btech Mech.	**Division**	-	**Semester**	**VI**
				Maximum Marks	**30**

Instructions:

1. *All Questions are Compulsory.*
2. *Figures to right indicated full marks.*
3. *Draw neat and labelled sketch wherever necessary*

Que.		**CO**	**BT Level**	**Max. Marks**
1.	**Attempt following questions.**			**10**
a)	Suggest suitable material for the following pats stating the special property which makes it suitable for use in manufacturing: i)Worm and Worm Gear ii) Dies iii) Roller Bearing iv) Carburettor Body v) Diesel Engine Crankshaft	304.1	**L4**	**5**
b)	Describe various stages involved in design of machine element,	304.1	**L2**	**5**
	OR			
b)	State and explain different theories of Elastic Failure.	304.1	**L1,2**	**5**
2.	**Attempt following questions.**			**10**
a)	Two rods are connected by means of Knuckle joint. The axial force P acting on the knuckle joint is 25 kN. The rods and the pin are made up of Plain Carbon Steel 45C8 (Syt=380 N/mm2) and the factor of safety is 2.5. The yield strength in shear is 57.7% of the yield strength in Tension. Calculate:- i)The diameter of the Rods ii) The diameter of the Pin	304.2	**L3**	**5**
	OR			
a)	A Double threaded power screw with ISO metric trapezoidal threads is used to raise the load of 300 kN.The nominal diameter is 100 mm and the pitch is 12 mm. The coefficient of the friction at the screw thread is 0.15. Neglecting he collar friction Calculate:- i) Torque required to raise the load ii) Torque required to lower the Load iii)Efficiency of the Screw	304.2	**L3**	**5**

b)	What is Recirculating Ball Screw? Explain with neat sketch.	304.2	**L1**	**5**
3.	**Attempt following questions.**			**10**
a)	Demonstrate the use of ASME code for shaft design with suitable Example.	304.2	**L3**	**5**
b)	The layout of an intermediate shaft of a gear box supporting two spur gears B and C is shown in Fig. The shaft is mounted on two bearings A and D.The pitch circle diameters of gear B and C are 900 and 600 mm respectively. The material of the shaft is Steel FeE 580 (Sut=770 and St= 580 N/mm2) The factors kb and kt of ASME code are 1.5 and 2.0 respectively. Determine the shaft diameter using the ASME code. Assume that the gears are connected to the shaft by means of keys.  	304.2	**L3**	**5**

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name	**Heat and Mass Transfer**			**Course Code**	**PCC-ME-303**
Day / Date	**Friday, 15/09/2023**			**Time**	**1.30pm-2.30pm**
Class	**TY- Mech**	**Division**		**Semester**	**V**
Instructions				**Maximum Marks**	**30**
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Que.		CO	BT Level	Max. Marks
1.	**Attempt following questions.**			**10**
a)	Calculate rate of heat transfer per unit area through Copper Plate 45 mm thick, whose one face is maintained at 3500 C and other face at 50°c. take K=370 W/ m 0 C for copper.	**ME303.1**	**L-4**	**5**
b)	State Newton's law of cooling and define convective heat transfer.	**ME303.1**	**L-1**	**5**
	OR			
b)	Define thermal conductivity and explain Factors affecting on thermal conductivity.	**ME303.1**	**L-1**	**5**
2.	**Attempt following questions.**			**10**
a)	Write note down thermal resistance	**ME303.1**	**L-6**	**5**
	OR			
a)	Write Note on mass transfer.	**ME303.1**	**L-6**	**5**
b)	A plane wall is 15 cm thick of surface area 4.5 m2.Thermal conductivity of wall is 9.5 W/MK. The inner and outer surface temperatures of the wall are maintained at 1500C and 450C respectively. Determine heat flow across wall and temperature gradient in the heat flow direction.	**ME303.1**	**L-5**	**5**
3.	**Attempt following questions.**			**10**
a)	Differentiate between steady state and unsteady state with example.	**ME303.2**	**L-2**	**5**
b)	Rate of heat generation in the plane wall of thickness 10 cm is 1.5 $X10^5$ W/m3 .One side of the wall is insulated while the other is exposed to a fluid of temperature 100 °c where heat transfer coefficient is 500 W/m^2K.Thermal conductivity of wall is 15 W/m-K. Determine maximum temperature in the wall.	**ME303.2**	**L-5**	**5**

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Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Department of Mechanical Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name	Enterprise Resource Planning	Course Code	ME306
Day / Date	16/06/2024	Time	1.30-2.30 PM
Class	T.Y B.tech Mechanical	Semester	VI
Instructions		Maximum Marks	30
1	*All Questions are Compulsory*		
2	*Figures to right indicated full marks*		
3	*Draw neat and labelled sketch wherever necessary*		

Que.		CO	BT Level	Max. Marks
1.	**Attempt the following questions.**			
a.	What are the direct benefit of ERP system	M306.1	L1	5
b.	What are the reasons for growth of ERP market	M306.1	L2	5
2.	**Attempt the following questions.**			
a.	What are the scope of ERP	M306.1	L1	5
b.	Explain customer relationship management (CRM)	M306.1	L2	5
3.	**Attempt any two the following questions.**			
a.	Business Process Re-engineering (BPR)	M306.1	L2	5
b.	Management Information System (MIS)	M306.1	L2	5
c	Supply Chain Management (SCM)	M306.1	L2	5
d	Decision Information System (DSS)	M306.1	L2	5

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Department of Mechanical Engineering

Internal Evaluation Test No.1 A.Y.2023-24

Course Name	**Total Quality Management**	**Course Code**	**PCC-ME-405**
Day / Date	**Saturday, 16/09/2023**	**Time**	**9 am- 10 am**
Class	**Final Year-B. Tech**	**Semester**	**VII**
Instructions		**Maximum Marks**	**30**
1	*All Questions are Compulsory*		
2	*Figures to right indicated full marks*		
3	*Draw neat and labelled sketch wherever necessary*		

Que.		CO	BT Level	Max. Marks
1.	**Attempt following questions.**			**10**
a)	"Absence of customer complaints does not necessarily mean that customers are satisfied". Comment.	**ME-405.1**	**L-4**	**5**
b)	Explain how Q.A. differs from Q.C. What are the roles and objectives of Q.A.	**ME-405.1**	**L-2**	**5**
	OR			
b)	Summarize needs, wants and expectations of Internal Customers.	**ME-405.1**	**L-2**	**5**
2.	**Attempt following questions.**			**10**
a)	Explain-Why six sigma attempts are not successful? How to overcome such failures.	**ME-405.3**	**L-4**	**5**
	OR			
a)	Six sigma status leads to organizational excellence. How to achieve it?	**ME-405.3**	**L-4**	**5**
b)	Explain how to prepare Quality Plan.	**ME-405.2**	**L-1**	**5**
3.	**Attempt following questions.**			**10**
a)	Explain - Juran links Quality Planning with Quality Control and Quality Improvement.	**ME-405.3**	**L-1**	**5**
b)	Explain - How TQM differs from traditional management approach?	**ME-405.2**	**L-2**	**5**

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test No.1

Course Name	Refrigeration & Air Conditioning			Course Code	PCC- ME-401
Day / Date	Thursday, 14/09/2023			Time	9 am-10am
Class	B.Tech- Mech	Division		Semester	VII
Instructions				Maximum Marks	30
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Que.		CO	BT Level	Max. Marks
1.	**Attempt following questions.**			**10**
a)	A Carnot Refrigerator works on a Reversed Carnot cycle this unit requires 1.5 kW power for every 1TR of refrigeration at -23oC.Determine: 1. COP of Refrigerator 2. COP of heat pump. 3. The higher temperature of the cycle.	**ME-401.1**	**L-5**	**5**
b)	State the various methods of air refrigeration used for aircraft. Describe simple cooling system for aircraft.	**ME-401.1**	**L-2**	**5**
	OR			
b)	Explain in detail the Vapour Compression refrigeration cycle on P-H & T-S diagram.	**ME-401.1**	**L-2**	**5**
2.	**Attempt following questions.**			**10**
a)	Differentiate clearly between a Heat Engine, Refrigerator and Heat Pump	**ME-401.1**	**L-2**	**5**
	OR			
a)	Derive an expression for Bell Coleman cycle with P-V & T-S diagram.	**ME-401.1**	**L-3**	**5**
b)	Define the following. (Any Four) 1.C.O.P. 2.E.E.R. 3.Tonnes of Refrigeration 4.Refregeration 5.Air Conditioning	**ME-401.1**	**L-1**	**5**
3.	**Attempt following questions.**			**10**
a)	Write short note on- Cryogenics and it's application	**ME-401.1**	**L-6**	**5**
b)	A Simple VCR Plant produces 5 TR .The enthalpies values at inlet to compressor ,at exit from compressor and at exit from the condenser are 183.9, 209.41and 74.6 kJ/kg respectively. Estimate: 1.Refrigerant flow 2. The C.O.P. 3. The power required to drive the compressor	**ME-401.1**	**L-6**	**5**

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Tal Hatkanangle Dist Kolhapur 416112

Department of Mechanical Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name	Mechanical System Design			Course Code	PCC ME 402
Day / Date	Friday, 15/09/2023			Time	9.00-10.00 am
Class	B. Tech	Division		Semester	VII
Instructions				Maximum Marks	30
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Q.1)	Attempt the following questions	CO	BT Level	Max. Marks
a)	Explain following w.r.to aesthetic design i) Form ii) Symmetry and Balance iii) Color iv) Style	ME402.1	L2	04
	OR			
a)	Explain relationship between man, machine and environment.	ME402.1	L2	04
b)	Explain the ergonomic design consideration involved in the dashboard panel of car. With suitable example, explain effect of appearance, shape, color and quality in aesthetic design.	ME402.1	L3	06
Q.2)	**Attempt the following questions**			
a)	Derive Clavarino's and Brinie's equations for pressure vessel	ME402.2	L3	05
	OR			
a)	Explain classification of pressure vessels as per IS 2825-1969.	ME402.2	L3	05
b)	The piston rod of a hydraulic cylinder exerts an operating force of 10 kN. The friction due to piston packing and stuffing box is equivalent to 10% of the operating force. The pressure in the cylinder is 10 MPa. The cylinder is made of cast iron FG 200 and the factor of safety is 5. Determine the diameter and the thickness of the cylinder.	ME402.2	L3	05
Q.3)	**Attempt the following questions**			
a)	Explain desirable properties of materials for cylinders and cylinder liners.	ME402.3	L2	04
	OR			
a)	Explain briefly stresses in cylinder wall.	ME402.3	L2	04
b)	The cylinder of a four stroke diesel engine as the following specifications Brake power = 3.75 kW. Speed = 1000 rpm. Indicated Mean Effect Pressure = 0.35 Mpa. Mechanical Efficiency = 80% Determine the bore and length of the cylinder liner.	ME402.3	L3	06

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Faculty of Engineering & Faculty of Management
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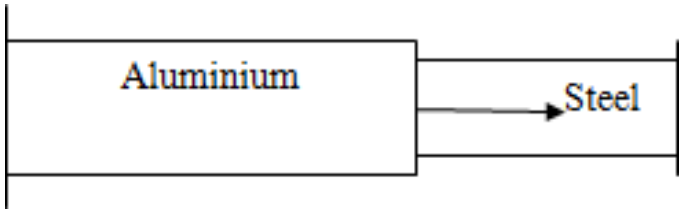
Department of Mechanical Engineering

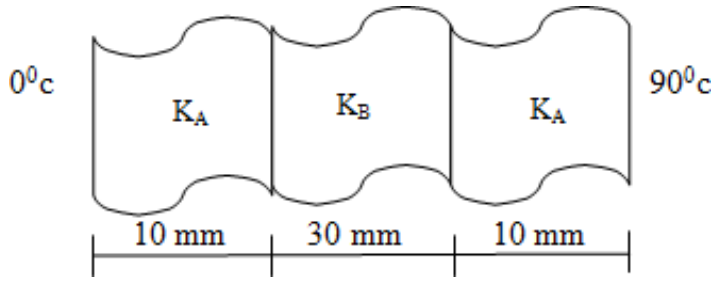
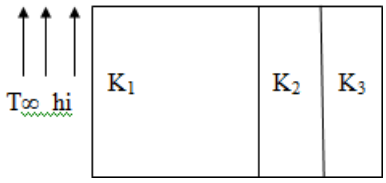
Internal Evaluation Test No.1 A.Y 2023-24

Course Name	**Finite Element Analysis**			**Course Code**	PCC-ME-403
Day & Date:	Friday 15/09/2023			**Time**	1.30 to 2.30p.m
Class	B.Tech- Mech.	**Division**	-	**Semester**	**VII**
				Maximum Marks	**30**

Instructions:

1. *All Questions are Compulsory.*
2. *Figures to right indicated full marks.*
3. *Draw neat and labelled sketch wherever necessary*

Que.		**CO**	**BT Level**	**Max. Marks**
1.	**Attempt following questions.**			**10**
a)	What are the Applications of FEM in various fields?	403.1	**L3**	**5**
b)	Explain the concept of simplification through symmetry.	403.1	**L2**	**5**
	OR			
b)	Discuss the general steps of finite element analysis.	403.1	**L2**	**5**
2.	**Attempt following questions.**			**10**
a)	Consider the two stepped bar shown in fig. An axial load $P=200x10^3 N/mm^2$ is applied as shown in the figure. Determine nodal displacements.  AluminiumSteel $A_1=2400mm^2 A_2=600mm^2$ $E_1=70\times10^3 N/mm^2 E_2=200\times10^3 N/mm^2$	403.2	**L3**	**5**

	OR			
a)	Use Finite Element method to find temperature distribution and heat flow through the composite wall.  K_A = 40 X 10^{-3} W/ mm°C K_B=0.2X10^{-3}W/mm°C	403.2	**L4**	**5**
b)	Derive an expression of stiffness matrix of 1D Linear element.	403.1	**L1**	**5**
3.	**Attempt following questions.**			**10**
a)	Derive an expression of shape function of 1D linear element.	403.1	**L1**	**5**
b)	Acompositewallconsistingofthreematerialsasshowninfigure.Theoutertemperatureis40°C.Convectionheattransfertakesplaceontheinnersurfaceofthewallwith$T\infty$=500°Candh=25W/m^2°C.Determine thetemperaturedistribution inthewall. K_1=20W/m°C,K_2=30W/m°C,K_3=50W/m°C,T_O=40°C,L_1=0.3 m,L_2=0.1m,L_3=0.1 m  	403.2	**L3**	**5**

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Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test No.1 A.Y 2023-24

Course Name	**Automobile Engineering**			**Course Code**	PCE-ME-404
Day & Date:	**Thursady 14/09/2023**			**Time**	1.30 to 2.30p.m
Class	B.Tech- Mech.	**Division**	-	**Semester**	**VII**
				Maximum Marks	**30**

Instructions:

1. *All Questions are Compulsory.*
2. *Figures to right indicated full marks.*
3. *Draw neat and labelled sketch wherever necessary*

Que.		**CO**	**BT Level**	**Max. Marks**
1.	**Attempt following questions.**			**10**
a)	List the different vehicle layouts. Explain the difference between front engine front wheel drive and front engine rear wheel drive.	404.1	**L1,2**	**5**
b)	Explain the types of frames with neat sketch.	404.1	**L2**	**5**
	OR			
b)	Explain the types of vehicle bodies.	404.1	**L2**	**5**
2.	**Attempt following questions.**			**10**
a)	Explain working of Torque Convertor with the help of neat sketch.	404.2	**L2**	**5**
	OR			
a)	Explain Synchromesh Gear Box used in Kia Vehicles in detail.	404.2	**L3**	**5**
b)	Classify different types of clutches used in automobiles. Explain Centrifugal Clutch used in TATA Vehicles with neat sketch	404.2	**L3,4**	**5**
3.	**Attempt following questions.**			**10**
a)	Explain Live Axle and Dead Axle.	404.2	**L2**	**5**
b)	Classify two types of steering mechanism? Explain any one of them with neat sketch.	404.2	**L2,4**	**5**

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test No.1 A.Y 2023-24

Course Name	**Automobile Engineering**			**Course Code**	PCE-ME-404
Day & Date:	**Thursady 14/09/2023**			**Time**	1.30 to 2.30p.m
Class	B.Tech- Mech.	**Division**	-	**Semester**	**VII**
				Maximum Marks	**30**

Instructions:

1. *All Questions are Compulsory.*
2. *Figures to right indicated full marks.*
3. *Draw neat and labelled sketch wherever necessary*

Que.		**CO**	**BT Level**	**Max. Marks**
1.	**Attempt following questions.**			**10**
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	OR			
b)	Explain the types of vehicle bodies.	404.1	**L2**	**5**
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a)	Explain working of Torque Convertor with the help of neat sketch.	404.2	**L2**	**5**
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a)	Explain Synchromesh Gear Box used in Kia Vehicles in detail.	404.2	**L3**	**5**
b)	Classify different types of clutches used in automobiles. Explain Centrifugal Clutch used in TATA Vehicles with neat sketch	404.2	**L3,4**	**5**
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a)	Explain Live Axle and Dead Axle.	404.2	**L2**	**5**
b)	Classify two types of steering mechanism? Explain any one of them with neat sketch.	404.2	**L2,4**	**5**

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test No.1 A.Y.2023-24

Course Name	**Total Quality Management**	**Course Code**	**PCC-ME-405**
Day / Date	**Saturday, 16/09/2023**	**Time**	**9 am- 10 am**
Class	**Final Year-B. Tech**	**Semester**	**VII**
Instructions		**Maximum Marks**	**30**
1	*All Questions are Compulsory*		
2	*Figures to right indicated full marks*		
3	*Draw neat and labelled sketch wherever necessary*		

Que.		CO	BT Level	Max. Marks
1.	**Attempt following questions.**			**10**
a)	"Absence of customer complaints does not necessarily mean that customers are satisfied". Comment.	**ME-405.1**	**L-4**	**5**
b)	Explain how Q.A. differs from Q.C. What are the roles and objectives of Q.A.	**ME-405.1**	**L-2**	**5**
	OR			
b)	Summarize needs, wants and expectations of Internal Customers.	**ME-405.1**	**L-2**	**5**
2.	**Attempt following questions.**			**10**
a)	Explain-Why six sigma attempts are not successful? How to overcome such failures.	**ME-405.3**	**L-4**	**5**
	OR			
a)	Six sigma status leads to organizational excellence. How to achieve it?	**ME-405.3**	**L-4**	**5**
b)	Explain how to prepare Quality Plan.	**ME-405.2**	**L-1**	**5**
3.	**Attempt following questions.**			**10**
a)	Explain - Juran links Quality Planning with Quality Control and Quality Improvement.	**ME-405.3**	**L-1**	**5**
b)	Explain - How TQM differs from traditional management approach?	**ME-405.2**	**L-2**	**5**

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test No.1

Course Name	Refrigeration & Air Conditioning			Course Code	PCC- ME-401
Day / Date	Thursday, 14/09/2023			Time	9 am-10am
Class	B.Tech- Mech	Division		Semester	VII
Instructions				Maximum Marks	30
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Que.		CO	BT Level	Max. Marks
1.	**Attempt following questions.**			**10**
a)	A Carnot Refrigerator works on a Reversed Carnot cycle this unit requires 1.5 kW power for every 1TR of refrigeration at -23oC.Determine: 1. COP of Refrigerator 2. COP of heat pump. 3. The higher temperature of the cycle.	**ME-401.1**	**L-5**	**5**
b)	State the various methods of air refrigeration used for aircraft. Describe simple cooling system for aircraft.	**ME-401.1**	**L-2**	**5**
	OR			
b)	Explain in detail the Vapour Compression refrigeration cycle on P-H & T-S diagram.	**ME-401.1**	**L-2**	**5**
2.	**Attempt following questions.**			**10**
a)	Differentiate clearly between a Heat Engine, Refrigerator and Heat Pump	**ME-401.1**	**L-2**	**5**
	OR			
a)	Derive an expression for Bell Coleman cycle with P-V & T-S diagram.	**ME-401.1**	**L-3**	**5**
b)	Define the following. (Any Four) 1.C.O.P. 2.E.E.R. 3.Tonnes of Refrigeration 4.Refregeration 5.Air Conditioning	**ME-401.1**	**L-1**	**5**
3.	**Attempt following questions.**			**10**
a)	Write short note on- Cryogenics and it's application	**ME-401.1**	**L-6**	**5**
b)	A Simple VCR Plant produces 5 TR .The enthalpies values at inlet to compressor ,at exit from compressor and at exit from the condenser are 183.9, 209.41and 74.6 kJ/kg respectively. Estimate: 1.Refrigerant flow 2. The C.O.P. 3. The power required to drive the compressor	**ME-401.1**	**L-6**	**5**

D.Y.Patil Technical Campus

Faculty of Engineering & Faculty of Management, Talsande
Tal Hatkanangle Dist Kolhapur 416112

Department of Mechanical Engineering

Internal Evaluation Test-I A Y 2023-24

Course Name	Mechanical System Design			Course Code	PCC ME 402
Day / Date	Friday, 15/09/2023			Time	9.00-10.00 am
Class	B. Tech	Division		Semester	VII
Instructions				Maximum Marks	30
1	*All Questions are Compulsory*				
2	*Figures to right indicated full marks*				
3	*Draw neat and labelled sketch wherever necessary*				

Q.1)	Attempt the following questions	CO	BT Level	Max. Marks
a)	Explain following w.r.to aesthetic design i) Form ii) Symmetry and Balance iii) Color iv) Style	ME402.1	L2	04
	OR			
a)	Explain relationship between man, machine and environment.	ME402.1	L2	04
b)	Explain the ergonomic design consideration involved in the dashboard panel of car. With suitable example, explain effect of appearance, shape, color and quality in aesthetic design.	ME402.1	L3	06
Q.2)	**Attempt the following questions**			
a)	Derive Clavarino's and Brinie's equations for pressure vessel	ME402.2	L3	05
	OR			
a)	Explain classification of pressure vessels as per IS 2825-1969.	ME402.2	L3	05
b)	The piston rod of a hydraulic cylinder exerts an operating force of 10 kN. The friction due to piston packing and stuffing box is equivalent to 10% of the operating force. The pressure in the cylinder is 10 MPa. The cylinder is made of cast iron FG 200 and the factor of safety is 5. Determine the diameter and the thickness of the cylinder.	ME402.2	L3	05
Q.3)	**Attempt the following questions**			
a)	Explain desirable properties of materials for cylinders and cylinder liners.	ME402.3	L2	04
	OR			
a)	Explain briefly stresses in cylinder wall.	ME402.3	L2	04
b)	The cylinder of a four stroke diesel engine as the following specifications Brake power = 3.75 kW. Speed = 1000 rpm. Indicated Mean Effect Pressure = 0.35 Mpa. Mechanical Efficiency = 80% Determine the bore and length of the cylinder liner.	ME402.3	L3	06

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

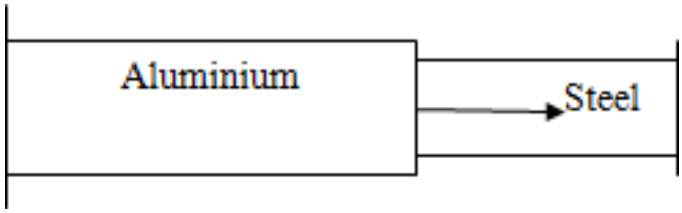
Department of Mechanical Engineering

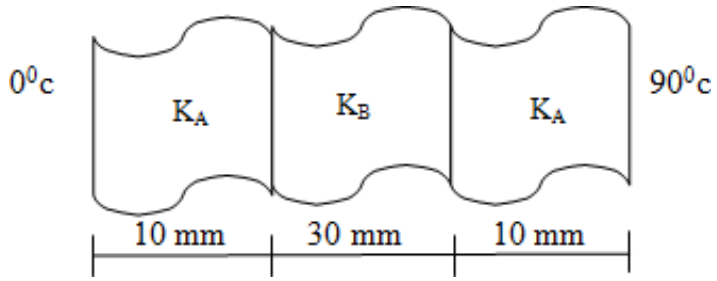
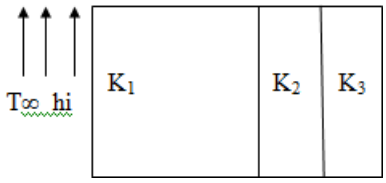
Internal Evaluation Test No.1 A.Y 2023-24

Course Name	**Finite Element Analysis**			**Course Code**	PCC-ME-403
Day & Date:	Friday 15/09/2023			**Time**	1.30 to 2.30p.m
Class	B.Tech- Mech.	**Division**	-	**Semester**	**VII**
				Maximum Marks	**30**

Instructions:

1. *All Questions are Compulsory.*
2. *Figures to right indicated full marks.*
3. *Draw neat and labelled sketch wherever necessary*

Que.		**CO**	**BT Level**	**Max. Marks**
1.	**Attempt following questions.**			**10**
a)	What are the Applications of FEM in various fields?	403.1	**L3**	**5**
b)	Explain the concept of simplification through symmetry.	403.1	**L2**	**5**
	OR			
b)	Discuss the general steps of finite element analysis.	403.1	**L2**	**5**
2.	**Attempt following questions.**			**10**
a)	Consider the two stepped bar shown in fig. An axial load $P=200x10^3 N/mm^2$ is applied as shown in the figure. Determine nodal displacements.  AluminiumSteel $A_1=2400mm^2 A_2=600mm^2$ $E_1=70\times10^3 N/mm^2 E_2=200\times10^3 N/mm^2$	403.2	**L3**	**5**

	OR			
a)	Use Finite Element method to find temperature distribution and heat flow through the composite wall.  K_A = 40 X 10^{-3} W/ mm°C K_B=0.2X10^{-3}W/mm°C	403.2	**L4**	**5**
b)	Derive an expression of stiffness matrix of 1D Linear element.	403.1	**L1**	**5**
3.	**Attempt following questions.**			**10**
a)	Derive an expression of shape function of 1D linear element.	403.1	**L1**	**5**
b)	Acompositewallconsistingofthreematerialsasshowninfigure.Theoutertemperatureis40°C.Convectionheattransfertakesplaceontheinnersurfaceofthewallwith$T\infty$=500°Candh=25W/m^2°C.Determine thetemperaturedistribution inthewall. K_1=20W/m°C,K_2=30W/m°C,K_3=50W/m°C,T_O=40°C,L_1=0.3 m,L_2=0.1m,L_3=0.1 m  	403.2	**L3**	**5**

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Faculty of Engineering & Faculty of Management
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Department of Mechanical Engineering

Internal Evaluation Test No.1 A.Y 2023-24

Course Name	**Automobile Engineering**			**Course Code**	PCE-ME-404
Day & Date:	**Thursady 14/09/2023**			**Time**	1.30 to 2.30p.m
Class	B.Tech- Mech.	**Division**	-	**Semester**	**VII**
				Maximum Marks	**30**

Instructions:

1. *All Questions are Compulsory.*
2. *Figures to right indicated full marks.*
3. *Draw neat and labelled sketch wherever necessary*

Que.		**CO**	**BT Level**	**Max. Marks**
1.	**Attempt following questions.**			**10**
a)	List the different vehicle layouts. Explain the difference between front engine front wheel drive and front engine rear wheel drive.	404.1	**L1,2**	**5**
b)	Explain the types of frames with neat sketch.	404.1	**L2**	**5**
	OR			
b)	Explain the types of vehicle bodies.	404.1	**L2**	**5**
2.	**Attempt following questions.**			**10**
a)	Explain working of Torque Convertor with the help of neat sketch.	404.2	**L2**	**5**
	OR			
a)	Explain Synchromesh Gear Box used in Kia Vehicles in detail.	404.2	**L3**	**5**
b)	Classify different types of clutches used in automobiles. Explain Centrifugal Clutch used in TATA Vehicles with neat sketch	404.2	**L3,4**	**5**
3.	**Attempt following questions.**			**10**
a)	Explain Live Axle and Dead Axle.	404.2	**L2**	**5**
b)	Classify two types of steering mechanism? Explain any one of them with neat sketch.	404.2	**L2,4**	**5**

D. Y. Patil Technical Campus, Talsande

Faculty of Engineering & Faculty of Management
Talsande, Tal.-Hatkanagale, Dist.-Kolhapur - 416112

Department of Mechanical Engineering

Internal Evaluation Test No.1 A.Y 2023-24

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