Sir M.Visvesvaraya Institute of Technology

Bengaluru - 562157

Approved by AICTE | Affiliated to VTU Belagavi | Accredited by NAAC

Department of Information Science and Engineering

Course File

Name of the Faculty : Pradeep kumar
Academic Year : 2023-24
Name of the faculty :

Name of the Subject with code : EM (BEELO1)
Semester and year VIII & IV : EM (18EE832)

SL No	Contents in Course File	Page Number
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8.	Lesson Plan	08
9.	Evaluation Pattern for the course	09
10.	CO-PO-PSOs Mapping and justification	10
11.	CO-PO Attainment sheet of the previous year for the same course Actions taken to improve the attainment and report MoM from DAAC(DEPT Academic Advisory Committee)	-
12.	Lab Course Plan with CO/PO/PSO Mapping for Lab(IPCC) CO PO mapping print out sheet for Lab CO-PO Justification for the correlation given 1,2,3 for Lab CO-PO Attainment sheet for Lab CO-PO Attainment sheet of the previous year for the same lab course Continuous Improvement Evaluation (CIE) in Lab sheet.	-
13.	Gaps in the curriculum as identified during the introduction of new scheme	-
14.	Topics Beyond Syllabus to bridge the Gaps in the Curriculum	-
15.	Internal Test Question papers with CO –PO mapping and Blooms Taxonomy with scheme of evaluation.	11

16.	Internal Marks	12
17.	List of slow learners and attendance sheet of the remedial classes conducted and impact analysis.	13
18.	List of fast learners and their achievements	-
19.	Tutorial sheets(If applicable)	-
20.	Course Material	14
21	Pedagogical/Innovative Teaching	15
22.	Impact Analysis sheet of Assignment/Seminar/Workshop along with PO attainment	16
23.	Course end survey by the students.	17
24.	Student Feedback	-
25.	Result Analysis	18
26.	CO-PO Attainment sheet	19
27.	Additional Responsibilities if any	—

Signature of Staff

Signature of HOD

SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY
(Affiliated to Visvesvaraya Technological University)
Bangalore – 562 157
Department of Electrical and Electronics Engineering

Institute Vision

- To be a centre of excellence in technical and management education concurrently focusing on disciplined and integrated development of personality through quality education, sports, cultural and co-curricular activities.
- To promote transformation of students into better human beings, responsible citizens And competent professionals to serve as a valuable resource for industry, work environment and society.

Institute Mission

- To impart quality technical education, provide state-of-art facilities, achieve high quality in teaching-learning & research and encourage extra & co-curricular activities.
- To stimulate in students a spirit of inquiry and desire to gain knowledge and skills to meet the changing needs that can enrich their lives.
- To provide opportunity and resources for developing skills for employability and entrepreneurship, nurturing leadership qualities, imbibing professional ethics and societal commitment.
- To create an ambiance and nurture conducive environment for dedicated and quality \ staff to upgrade their knowledge & skills and disseminate the same to students on a sustainable long term basis.
- To facilitate effective interaction with the industries, alumni and research institutions.

EEE Department Vision

- To be a pioneer in imparting quality technical education of high standards to produce skilled manpower with trained intelligence and emotional balance.

EEE Department Mission

- To nurture an integrated growth of talented youngsters and enrich their knowledge in modern branches of electrical sciences and develop them into competent technocrats and disciplined humans beneficial to global society.

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

Vision of EEE Department

To be a pioneer in imparting quality technical education of high standards to produce skilled manpower with trained intelligence and emotional balance.

Mission of EEE Department

To nurture an integrated growth of talented youngsters and enrich their knowledge in modern branches of electrical sciences and develop them into competent technocrats and disciplined humans beneficial to global society.

Program Educational Objectives (PEOs)

PEO1: Graduates of the program will have a successful career with sound base in domain specific engineering skills.

PEO2: Graduates of the program will be capable of succeeding in diverse engineering fields providing innovative solutions with ethical and social responsibility.

PEO3: Graduates of the program will continue to pursue professional development and engage in life-long learning.

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING

PROGRAM SPECIFIC OUTCOMES (PSOs)

Engineering Graduates will be able to:

PSO1: Comprehend the breadth and depth of electrical and electronics engineering and apply their knowledge in the fields of power system, power electronics and drives.

PSO2: Enhance their career by adapting contemporary tools and techniques to augment electrical and electronic systems.

DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINNERING

PROGRAM OUTCOMES (POs)

Engineering Graduates will be able to:

PO1: Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of Mathematics, natural sciences, and engineering sciences.

PO3: Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Modern tool usage: Create, select, and apply appropriate techniques, resources, and Modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.

PO6: The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.

PO8: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO9: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO10: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO11: Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO12: Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

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Sir M Visvesvaraya Institute of Technology
Department of Electrical & Electronics Engineering
Academic Year 2023-2024 (Even)
SUBJECT ALLOTMENT ORDER

Name of the Faculty	**PRADEEP KUMAR**
Designation	**Asst. Professor**

A. THEORY SUBJECT

Sl. No	Name of the Subject and Sub.code	Type of subject (core/professional/ open elective)	Semester	Section
1	ELECTRIC MOTORS	CORE	IV	B
2	ELECTRICAL ESTIMATION & COSTING	PROFESSIONAL Elective	VIII	A&B

Instruction:
(i)Prepare lesson plan and session plan based on the college calendar.
(ii)Prepare notes for all modules well in advance along with PPTs if necessary.
(iii)Collect necessary videos if required, NPTEL notes etc.

B. LABORATORY

Sl. No	Name of the Lab	Batch Number	Semester	Section
1	ELECTRICAL MACHINES LAB (BEEL404)	A1	IV	A
2		A2	IV	A
3		A3	IV	A
4		B1	IV	B
5				

Instruction:
(i) Practice all experiments well in advance.
(ii) Make sure that all equipments/components are available and in working condition before starting lab session.
(iii)Evaluate the observation on the day of experiment conduction and record in the subsequent lab session.

Head of Department

COURSE INFORMATION SHEET

<table>
<tr><td>Course Name / Code</td><td colspan="3">Electrical Estimation Costing/18EE822</td></tr>
<tr><td>Degree / Branch</td><td colspan="3">B.E / Electrical and Electronics Engineering</td></tr>
<tr><td>Course Credit</td><td colspan="3">3</td></tr>
<tr><td>Course Category</td><td colspan="3">PROFESSIONAL ELECTIVE Subject</td></tr>
<tr><td rowspan="2">Course Teacher Contact Details</td><td rowspan="2">Course Teacher Name</td><td colspan="2">Contact Details</td></tr>
<tr><td>Mobile</td><td>E-mail</td></tr>
<tr><td></td><td>Mr. Pradeep Kumar</td><td>9740024557</td><td>pradeepkumar_eee@sirmvit.edu</td></tr>
<tr><td>Head of the Department</td><td colspan="3">Dr. H.L. Suresh</td></tr>
</table>

COURSE INFORMATION SHEET

<table>
<tr><td>Course Name / Code</td><td colspan="3">Electric Motors/BEE401</td></tr>
<tr><td>Degree / Branch</td><td colspan="3">B.E / Electrical and Electronics Engineering</td></tr>
<tr><td>Course Credit</td><td colspan="3">3</td></tr>
<tr><td>Course Category</td><td colspan="3">Core Subject</td></tr>
<tr><td rowspan="3">Course Teacher Contact Details</td><td rowspan="2">Course Teacher Name</td><td colspan="2">Contact Details</td></tr>
<tr><td>Mobile</td><td>E-mail</td></tr>
<tr><td>Mr. Pradeep Kumar</td><td>9740024557</td><td>pradeepkumar_eee@sirmvit.edu</td></tr>
<tr><td>Head of the Department</td><td colspan="3">Dr. H.L. Suresh</td></tr>
</table>

SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY

ACADEMIC CALENDAR FOR EVEN SEMESTER 2023-24 - UG & ODD SEMESTER 2023-24 -PG

Particulars	8th Sem BE 2018 Scheme	6th Sem BE 2021 Scheme	4th Sem BE 2022 Scheme	2nd Sem BE 2022 Scheme	3rd Sem MBA 2022 Scheme	4th Sem MCA 2022 Scheme	4th MBA 2022 Scheme	4th Sem MTech	1st Sem MBA	1st Sem MCA	1st Sem MTech
Commencement of Even Semester	12-02-2024	29-04-2024	22-04-2024	06-03-2024	01-12-2024	22-04-2024	10-06-2024	22-04-2024	12-02-2024	12-02-2024	12-02-2024
Students Induction Programme /Internship/*Societal Project	NA	NA	NA	NA	23/04/24 to 06/06/24	NA	NA	NA	*08-07-24 to 13-07-24	NA	NA
Commencement of Classes	12-02-2024	29-04-2024	22-04-2024	06-03-2024	01-12-2024	22-04-2024	10-06-2024	22-04-2024	12-02-2024	12-02-2024	12-02-2024
Last Working Day	11-05-2024	31-07-2024	07-08-2024	29-06-2024	13-03-2024	27-07-2024	28-09-2024	27-07-2024	08-06-2024	08-06-2024	08-06-2024
Internship Viva/Practical / Viva Examination	NA	01-08-24 to 10-08-24	08-08-24 to 17-08-24	01-07-24 to 11-07-24	18-04-24 to 22-04-24	28-07-24 to 29-07-24	NA	NA	NA	10-06-24 to 15-06-24	10-06-24 to 15-06-24
Theory Examination	16-05-24 to 30-05-24	12-08-24 to 14-09-24	19-08-24 to 12-09-24	15-07-24 to 10-08-24	18-03-24 to 17-04-24	01-08-24 to 23-08-24	30-09-24 to 06-11-24	01-08-24 to 23-08-24	03-06-24 to 20-06-24	18-06-24 to 05-07-24	18-06-24 to 05-07-24
First Test Dates	March 22-23,2024	June 10-12, 2024	June 10-12, 2024	May 13-17,2024	Jan 22-27, 2024	May 31,2024	July 22-6,2024	NA	April 01-03, 2024	March 25-28, 2024	April 01-03, 2024
Second Test Dates	April 22,2024	July 03-04, 2024	July29-31, August 02,05, 2024	June 24-27,2024	March 04-09, 2024	June 28, 2024	September 17-23, 2024	NA	June 03-08, 2024	April 24-29, 2024	May 02-06, 2024
Third Test Dates	May 08-09,2024	July 25-27, 2024	NA	NA	NA	July 23, 2024	NA	NA	NA	May 25 -29, 2024	June 04-06, 2024
Submission of Report to University	NA	NA	NA	NA	NA	13-07-24 to 27-07-24	13-09-24 to 28-09-24	01-08-24 to 20-08-24	NA	NA	NA
Commencement of ODD Semester	NA	23-09-2024	16-09-2024	19-08-2024	10-06-2024	NA	NA	NA	15-07-2024	15-07-2024	15-07-2024

LIST OF HOLIDAYS (upto December, 2024)	
Mahashivarathri	08.03.2024
Good Friday	29.03.2024
Ugadi	09.04.2024
Ramzan	11.04.2024
May Day	01.05.2024
Basava Jayanthi	10.05.2024
Bakrid	18.06.2024
Muharram	17.07.2024
Independence Day	15.08.2024
Ganesh Chaturthi	07.09.2024
Id Meelad	16.09.2024
Gandhi Jayanthi	02.10.2024
Ayudha Pooja	11.10.2024
Vijayadashmi	12.10.2024
Valmiki Jayanthi	17.10.2024
Naraka Chaturdashi	31.10.2024
Rajyothsava Day	01.11.2024
Balipadyami	02.11.2024
Kanakadasa Jayanthi	18.11.2024
Christmas	25.12.2024

IMPORTANT DATES (Tentative)	
Photo Shoot	23-03-2024
Graduation Day	19-04-2024
College Day	TBA

VISVESVARAYA INSTITUTE OF TECHNOLOGY
SL. No. 644
Date 26/7/24
SIR M. BANGALORE-562 157

27/7/24

PRINCIPAL
SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY
Krishnadevarayanagar, Hunasamaranahalli,
International Airport Road, BANGALORE-562 157

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SA-2 LAB (B2) [MK, MRS]

ವಿಶ್ವೇಶ್ವರಯ್ಯ ತಾಂತ್ರಿಕ ವಿಶ್ವವಿದ್ಯಾಲಯ
(ವಿ ಟಿ ಯು ಅಧಿನಿಯಮ 1994ರ ಅನ್ವಯ ಕರ್ನಾಟಕ ಸರ್ಕಾರದಿಂದ ಸ್ಥಾಪಿತವಾದ ರಾಜ್ಯ ವಿಶ್ವವಿದ್ಯಾಲಯ)
VISVESVARAYA TECHNOLOGICAL UNIVERSITY
(State University of Government of Karnataka Established as per the VTU Act, 1994)
Phone :0831-2498100 / 2405468
Fax :0831-2405467
Email : registrar@vtu.ac.in
Web : https://vtu.ac.in

Reference: VTU/BGM/AC /2023-24/6085 **Dated:** 22 - 1 - 2024

NOTIFICATION

Subject: Tentative Academic Calendar of VIII semester B.E/B.Tech./B.Arch/B.Plan programs regarding...

Reference: Dean Faculty of Engineering Approval Dated: 14.01.2024
The Hon'ble Vice Chancellor's approval dated: 14.01.2024

The Tentative academic calendar concerned to VIII semesters' of B.E./B.Tech./B.Arch/B.Plan programs for the academic year 2023-24 is hereby notified as follows;

	VIII semester B.E./B.Tech.,	VIII semester B. Plan	VIII semester B.Arch.
Commencement of the Semester	12.02.2024	26.02.2024	01.02.2024
Commencement of Classes	12.02.2024	26.02.2024	01.02.2024
Last Working Day of the Semester	11.05.2024	25.05.2024	25.05.2024
Practical Examination	-----	------	27.05.2024 To 01.06.2024
Theory Examinations	13.05.2024 To 21.05.2024	03.06.2024 To 12.06.2024	03.06.2024 To 27.06.2024
Internship/Practical Exam for Lateral Entry Students	----	----	----
Internship Viva Voce/ Project viva	23.05.2024 To 30.05.2024	----	----
Commencement of NEXT Semester	----	----	----

Please Note:

- The academic sessions for semesters should commence on the **date mentioned** above.

Sir M. Visvesvaraya Institute of Technology, Bengaluru - 562 157

DEPARTMENT OF ELECTRICAL AND ELECTRONICS DEPARTMENT

Academic Year: 2023-24 (EVEN SEM) Staff Time Table

STAFF NAME: Mr. Pradeep Kumar

Time → Day ↓	9.00 am to 9.55 am	9.55 am to 10.50 am	10.50 am to 11.00 am	11.00 am to 11.55 am	11.55 am to 12.50 pm	12.50 pm to 1.35 pm	1.35 pm to 2.30 pm	2.30 pm to 3.25 pm	3.25 pm to 4.20 pm
Monday		ESC	TEA BREAK	EML (B1) [BC, PK]		LUNCH BREAK			
		EM							
Tuesday	ESC	EM		ESC			EML (A1) [RSP, PK]		
Wednesday	EML (A2) [PK, VRK]								
Thursday				EML (A3) [BC, PK]					
Friday				EM					
Saturday									

Head of the Department

Dr.Suresh H L
PROF. & HEAD
DEPT. OF ELECTRICAL & ELECTRONICS ENGG.
SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY
HUNASAMARANAHALLI, BANGALORE-562 157

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Sir M. Visvesvaraya Institute of Technology, Bengaluru - 562 157

Academic Year: 2023-24 Time Table –4th Semester with effect from20/05/2024

Sem / Sec: IV / B	BRANCH: EEE				ROOM No.: E-211			
Time → / Day ↓	9.00 am to 9.55am	9.55 am to 10.50 am	10.50 am to 11.00 am	11.00 am to 11.55 am	11.55 am to 12.50 pm	12.50 pm to 1.35 pm	1.35 pm to 2.30 pm	2.30 pm to 3.25 pm	3.25 pm to 4.20 pm
Monday	T&D	EM	TEA BREAK	EML (B1) [BC, PK] / µC – Lab (B2) [RRK,SM]		LUNCH BREAK	EPGE/ OOPs	LG	LG
Tuesday	µC	EM		EPGE/ OOPs	BE		LG	LG	LIB
Wednesday	µC	T&D		EML (B2) [RSP,BC] / µC – Lab (B3) [RRK, SM]			Forum / Club Activities		
Thursday	BE	T&D		UHV	µC		EPGE/ OOPs	SCILAB-EEM (D2) [RSP,MRS] / ARPP-LAB (C3) [DB, PKJ] / ARPP-LAB (C4) [PS,~~MS~~]	
Friday	BE	µC		EM	T&D		EML (B3) [CVM,VRK] / µC – Lab (B1) [PKJ,PN]		LIB
Saturday	NSS/Physical Education Director/ Yoga			NSS/Physical Education Director/ Yoga			NSS/Physical Education Director/ Yoga		

Sl. No.	Course	Course code	Course Title	Faculty Names (Initials)
1	PCC	BEE401	Electric Motors (EM)	Mr. Pradeep Kumar (PK)
2	PCC	BEE402	Transmission and Distribution (T&D)	Mr.Bhaskar C (BC)
3	IPCC	BEE403	Microcontrollers (µC)	Mrs.Rekha Radhakirshnan (RRK)
4	IPCC	BEE403	Microcontrollers Laboratory (µC-Lab) [E-109]	Mrs.Rekha Radhakirshnan (RRK) / Mrs. P. Kezia Joy Kumari (PKJ) / Mrs. Priyanka Nayak (PN) / Ms. Sandra M (SM)
5	PCCL	BEEL404	Electric Motors Lab (EML) [E-002]	Dr.C.V.Mohan (CVM) / Dr.R Sivapriyan (RSP) / Mr.Bhaskar C (BC) / Mr. Pradeep Kumar (PK) / Mr. V. Rajesh Kumar K (VRK)
6	ESC	BEE405A/BEE405D	Electric Power Generation and Economics (EPGE))-[E-210] / Objected Oriented Programming (OOPs) [E-203]	Ms. Sandra M (SM) / Dr.Mahesh K (MK)
7	AEC	BEEL456B	Scilab / MATLAB for Electric and Electronic Measurements (SCILAB-EEM) [E-001]	Dr.R Sivapriyan (RSP) / Dr.Siddappaji M R (MRS)
8	AEC	BEEL456D	Aurdino & Raspberry PI based Projects (ARPP) [E-108/109]	Mrs. D Beula (DB) / Mrs.P.Sumalatha (PS) / Mrs. P. Kezia Joy Kumari (PKJ) / Ms. Sandra M (SM)
9	BSC	BBOK407	Biology for Engineers (BE)	Dr. Hariharan P (HP)
10	UHV	BUHK408	Universal Human Values Course (UHV)	Dr.C.V.Mohan (CVM)
11	MC	BNSK/BPEK/BYOK459	NSS/Physical Education Director/ Yoga	Mr. Byre Gowda B.K (BBK) / Dr.Rajesh.Y.H (RYH)

Class Advisor: Mrs. Vijayalakshmi.K

Local Guardian(s)(LG):B1/B2/B3:- Mr. Kumarswamy.R / Dr. Siddappaji M R / Ms. Sandra M

Time Table officer(s) – TTO		Head of the Department	Chief Time Table Officer	Principal
Name	Dr. Siddappaji M R Mr. Pradeep Kumar	PROFESSOR & HEAD Dr. Suresh H M DEPT. OF ELECTRICAL & ELECTRONICS ENGG. SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY	Prof. S. B. Rajesh	Prof. S. G. Rakesh
Signature				

SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY, BENGALURU-562157			
ACADEMIC COORDINATION CELL			
8TH SEMESTER STUDENT LIST-PROFESSIONAL ELECTIVES-4			
DEPARTMENT OF ELECTRICAL & ELECTRONICS ENGINEERING			
SUBJECT: ELECTRICAL ESTIMATION & COSTING			
SUBJECT CODE		18EE822	AY:2023-24
SECTION: A&B			STRENGTH: 24
SL NO.	SECTION	USN	NAME
1	A	1MV20EE019	CHANDU J
2	A	1MV20EE034	KARTHIK K RATHOD
3	A	1MV21EE400	ABHISHEK D
4	A	1MV21EE402	AMRUTH KUMAR N
5	A	1MV21EE405	BALAJI J C
6	A	1MV21EE410	JALINDAR
7	A	1MV21EE412	LIKITH GOWDA H S
8	A	1MV21EE414	MAHESH K S
9	A	1MV21EE415	MANOJ KUMAR L
10	A	1MV21EE417	MOHAMMED NAWAZ
11	A	1MV21EE422	NIKIL MAHESH PATIL
12	B	1MV20EE040	MANJUNATH G C
13	B	1MV21EE429	RAKSHITA RAVINDRASWAMY HAMMIGIMATH
14	B	1MV21EE434	SAQEEB PASHA
15	B	1MV21EE435	SARASWATI SHEKHARAPPA SHIRUR
16	B	1MV21EE437	SHARATH KUMAR U
17	B	1MV21EE441	SHIVALINGAYYA
18	B	1MV21EE442	SRINATH K V
19	B	1MV21EE443	SUCHITHRA J
20	B	1MV21EE444	SUDEEP PATIL
21	B	1MV21EE445	SUHAS R KARNAM
22	B	1MV21EE446	SUHEB C N
23	B	1MV21EE448	UDAY J
24	B	1MV21EE450	MOHAMMAD MAKBUL

SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY, BENGALURU- 562 157		
DEPARTMENT OF ELECTRICAL AND ELECTRONICS ENGINEERING		
LIST OF STUDENTS FOR THE ACADEMIC YEAR 2023-2024		
IV SEMESTER B E SECTION " B "(EVEN SEM)		
Sl. No.	**USN**	**Name of the Students**
1	1MV22EE026	NIRANJAN D A
2	1MV22EE027	NIZAM UDDIN
3	1MV22EE029	PRATHIK D GOWDA
4	1MV22EE032	RAMESH
5	1MV22EE033	RUSHDA FIRDOSE
6	1MV22EE034	SACHIN BIRADAR
7	1MV22EE035	SAHANA B K
8	1MV22EE036	SANDEEP
9	1MV22EE037	SANKETH MASKI
10	1MV22EE038	SARITHA S
11	1MV22EE041	SNEHA
12	1MV22EE042	SNEHA BARGALE
13	1MV22EE043	SOUBHAGYALAXMI SHANTANAND ATANOOR
14	1MV22EE044	SUDEEP N
15	1MV22EE045	SUPREETA SURESH ALUR
16	1MV22EE046	UDITA SHANKAR
17	1MV22EE048	UNNATI KRISHNANAND SHIRSAT
18	1MV22EE049	VANDHYA K
19	1MV22EE050	VASUDHA HK
20	1MV22EE051	VENU P S
21	1MV22EE052	VIKAS D
22	1MV22EE053	VINAY KUMAR BALAGANUR
23	1MV22EE054	VINDHYA K
24	1MV22EE055	VISHNU PRIYA N
25	1MV22EE057	ZAINAB ISMAIL
26	1MV22EE058	VARUN KUMAR S M
27	1MV23EE441	MOHAMMADSOHAIL MOHAMMADELIYAS GOVE
28	1MV23EE442	NAGENDRA B M
29	1MV23EE443	NARESH P
30	1MV23EE444	NIKHIL S P
31	1MV23EE445	NIRANJAN BASAVARAJ YARAGATTI
32	1MV23EE446	NITHIN N
33	1MV23EE447	OMKARESHWARI
34	1MV23EE448	P SATYA SAI MOHAN
35	1MV23EE449	PRAJWAL H C
36	1MV23EE450	PRASHANTH T V

37	1MV23EE451	PRASHANTHA
38	1MV23EE452	PRATHVI RAVI NAIK
39	1MV23EE453	PREMARASHI G P
40	1MV23EE454	PRUTHVI RAJ A
41	1MV23EE455	PUNEETH B Y
42	1MV23EE456	RIYAZ DAVALASAB KOTABAL
43	1MV23EE457	SAGAR ANJANEYA HARIJAN
44	1MV23EE458	SANDEEP H N
45	1MV23EE459	SANGAMESH
46	1MV23EE460	SANGAMESH ARJUN MURANAL
47	1MV23EE461	SANGAMESH SHANKARAPPA SULLIKERI
48	1MV23EE462	SANJAY A K
49	1MV23EE463	SHESHADHRI
50	1MV23EE464	SHRIRAM SARAVANAN
51	1MV23EE465	SHRIVATSA T Y
52	1MV23EE466	SOWMYA G
53	1MV23EE467	SUHAS SH
54	1MV23EE468	SUMANTH KUMAR B V
55	1MV23EE469	SWAPNA T S
56	1MV23EE470	SWATHI C
57	1MV23EE471	THIPPESWAMY C
58	1MV23EE472	VAMSHI S
59	1MV23EE473	VANDANA S
60	1MV23EE474	VIDYA HANAMANT KUNDARGI
61	1MV23EE475	VISHMITHA J M
62	1MV23EE476	YASHWANTH SJ

Head of the Department
Dr. Suresh H L

B. E. ELECTRICAL AND ELECTRONICS ENGINEERING CHOICE BASED CREDIT SYSTEM (CBCS) AND OUTCOME BASED EDUCATION (OBE) SEMESTER – VIII			
ELECTRICAL ESTIMATION AND COSTING (PROFESSIONAL ELECTIVE)			
Course Code	18EE822	CIE Marks	40
Teaching Hours/Week (L:T:P)	(3:0:0)	SEE Marks	60
Credits	03	Exam Hours	03

Course Learning Objectives:

- To discuss the purpose of estimation and costing.
- To discuss market survey, estimates, purchase enquiries, tenders, comparative statement and payment of bills and Indian electricity act and some of the rules.
- To discuss distribution of energy in a building, wiring and methods of wiring, cables used in internal wiring, wiring accessories, fittings and fuses.
- To discuss design of lighting points and its number, total load, sub-circuits, size of conductor.
- To discuss different types of service mains and estimation of power circuits.
- To discuss estimation of overhead transmission and distribution system and its components.
- To discuss main components of a substation, their graphical representation and preparation of single line diagram of a substation.

Module-1

Principles of Estimation: Introduction to Estimation and Costing, Electrical Schedule, Catalogues, Market Survey and Source Selection, Recording of Estimates, Determination of Required Quantity of Material, Labour Conditions, Determination of Cost Material and Labour, Contingencies, Overhead Charges, Profit, Purchase System, Purchase Enquiry and Selection of Appropriate Purchase Mode, Comparative Statement, Purchase Orders, Payment Of Bills, Tender Form, General Idea about IE Rule, Indian Electricity(IE) Act and IE Rules -29,30,45,46,47,50,51,54,55,77 and79.

Module-2

Wiring: Introduction, Distribution of energy in a Building, PVC Casing and Capping, Conduit Wiring, Desirabilities of Wiring. Types of cables used in Internal Wiring, Multi Strand Cables, Voltage Grading and Specification of Cables.

Wiring (continued): Main Switch and Distribution Board, Conduits and its accessories and Fittings. Lighting Accessories and Fittings, Types of Fuses, Size of Fuse, Fuse Units, Earthing Conductor.

Internal Wiring: General rules for wiring, Design of Lighting Points (Refer to Seventh Chapter of the Text Book), Number of Points, Determination of Total Load, Number of Sub –Circuits, Ratings Main Switch and Distribution Board and Size of Conductor, Current Density, Layout.

Module-3

Service Mains: Introduction, Types, Estimation of Underground and Overhead Service Connections. Design and Estimation of Power Circuits: Introduction, Important Considerations Regarding Motor Installation Wiring, Input Power, Input Current to Motors, Rating of Cables, Rating of Fuse, Size of Condit, Distribution Board Main Switch and Starter.

Module-4

Estimation of Overhead Transmission and Distribution Lines: (Review of Line Supports, Conductor Materials, Size of Conductor for Overhead Transmission Line, Types of Insulators) [No Question Shall be Set From the Review Portion].

Cross Arms, Pole Brackets and Clamps, Guys and Stays, Conductors Configuration Spacing and Clearances, Span Lengths, Lightning Arrestors, Phase Plates, Danger Plates, Anti Climbing Devices, Bird Guards, Beads of Jumpers, Muffs, Points to be Considered at the Time of Erection of Overhead Lines, Erection of Supports, Setting of Stays, Fixing of Cross Arms, Fixing of Insulators, Conductor Erection. Repairing and Jointing of Conductors, Dead End Clamps, Positioning of Conductors and Attachment to Insulator s, Jumpers, Tee-Offs, Earthing of Transmission Lines, Guarding of Overhead Lines, Clearances of Conductor From Ground, Spacing Between Conductors, Important Specifications.

Module-5

Estimation of Substations: Main Electrical connection, Graphical Symbols for Various Types of Apparatus and Circuit Elements on Substation main Connection Diagram, Single Line Diagram of Typical Substations, Equipment for Substation, Substation Auxiliaries Supply, Substation Earthing.

Course Outcomes: At the end of the course the student will be able to:

- Discuss wiring methods, cables used, design of lighting points and sub-circuits, internal wiring, wiring accessories and fittings, fuses and types.
- Discuss estimation of service mains and power circuits.
- Discuss estimation of overhead transmission and distribution system its components.
- Discuss types of substation, main components and estimation of substation.

Question paper pattern:

- The question paper will have ten full questions carrying equal marks.
- Each full question will be for 20 marks.
- There will be two full questions (with a maximum of four sub- questions) from each module.
- Each full question will have sub- question covering all the topics under a module.
- The students will have to answer five full questions, selecting one full question from each module.

Sl No	Title of the Book	Name of the Author/s	Name of the Publisher	Edition and Year
Textbook				
1	A Course in Electrical Installation Estimating and Costing	J. B. Gupta	Katson Books	9th Edition, 2012

ELECTRIC MOTORS		Semester	IV
Course Code	BEE401	CIE Marks	50
Teaching Hours/Week (L:T:P: S)	3:0:0:0	SEE Marks	50
Total Hours of Pedagogy	40	Total Marks	100
Credits	03	Exam Hours	03
Examination nature (SEE)	Theory		

Course objectives:

1 To study the constructional features of Motors and select a suitable drive for specific Application.
2 To study the constructional features of Three Phase and Single phase induction Motors.
3 To study different test to be conducted for the assessment of the performance characteristics of motors.
4 To study the speed control of motor by a different methods.
5 Explain the construction and operation of Synchronous motor and special motors.

Teaching-Learning Process (General Instructions)

These are sample Strategies, which teachers can use to accelerate the attainment of the various course outcomes.

1. Lecturer method (L) needs not to be only traditional lecture method, but alternative effective teaching methods could be adopted to attain the outcomes.
2. Use of Video/Animation to explain functioning of various concepts.
3. Encourage collaborative (Group Learning) Learning in the class.
4. Ask at least three HOT (Higher order Thinking) questions in the class, which promotes critical thinking.
5. Adopt Problem Based Learning (PBL), which fosters students' Analytical skills, develop design thinking skills such as the ability to design, evaluate, generalize, and analyse information rather than simply recall it.
6. Introduce Topics in manifold representations.
7. Show the different ways to solve the same problem with different circuits/logic and encourage the students to come up with their own creative ways to solve them.
8. Discuss how every concept can be applied to the real world - and when that's possible, it helps improve the students' understanding.

Module-1

DC Motors: Construction and working principle. Back E.M.F and its significance, Torque equation, Classification, Characteristics of shunt, series & compound motors, Speed control of shunt motor, Application of motors.

Losses and Efficiency- Losses in DC motors, power flow diagram, efficiency, condition for maximum efficiency.

Testing of DC Motors: Direct & indirect methods of testing of DC motors- Swinburne's test, Field's test, merits and demerits of tests. (numerical as applicable)

Module-2

Three Phase Induction Motors: Concept and generation of rotating magnetic field, Principle of operation, construction, classification and types; squirrel-cage, slip-ring. Slip and its significance, Torque equation, torque-slip characteristic covering motoring, generating and braking regions of operation, Maximum torque, (numerical as applicable)

	SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY BANGALORE	RECORD FORMATS (ISO 9001:2000)
	R/PP04/04	LESSON PLAN

BEE401 –ELECTRIC MOTORS

WEEK	DATE		TOPICS PLANNED
	FROM	TO	
1	15-04-2024	20-04-2024	Orientation of Vision,Mission,CO,PO,PSO and PEOs **MODULE-1** 1.**DC Motors:** Construction and working principle. Back E.M.F and its significance, 2.Torque equation, Classification 3.Characteristics of shunt, series & compound motors
2	22-04-2024	27-04-2024	4. Speed control of Shunt motor, Application of motors. Problems 5.**Losses and Efficiency**- Losses in DC motors, , 6. efficiency, condition for maximum efficiency
3	29-04-2024	4-05-2024	7. power flow diagram, Problems 8. **Testing of DC Motors**: Direct & indirect methods of testing of DC motors- Swinburne's test, **May 1st –Holiday May day**
4	6-05-2024	11-05-2024	9. Field's test, merits and demerits of tests. Numerical **MODULE-2** 10. **Three Phase Induction Motors:** Principle of operation, construction **May 10th Holiday-Basavajayanthi**
5	13-05-2024	18-05-2024	11.Concept and generation of rotating magnetic field 12. Classification and types; squirrel-cage, slip-ring. 13. Slip and its significance, problems **May 18th Holiday-3rd Saturday**
6	20-05-2024	25-05-2024	14. Torque equation, problems 15. Maximum torque. 16. Torque-slip characteristic covering motoring, generating and braking regions of operation
7	27-05-2024	01-06-2024	17. Torque-slip characteristic low slip, medium and high slip **MODULE-3** 18. **Performance of Three-Phase Induction Motor:** Phasor diagram of induction motor on no-load and on load 19. equivalent circuit, losses, efficiency **June 1st Holiday-1st Saturday**
8	3-06-2024	8-06-2024	20. Problems 21.No-load and blocked rotor tests. 22. Performance of the motor from the equivalent circuit. Cogging and crawling

Prepared by : PRADEEP KUMAR

Designation : Assistant Professor

Signature

Approved by: Dr.H.L. SURESH

Designation : H.O.D.

Signature

	SIR M. VISVESVARAYA INSTITUTE OF TECHNOLOGY BANGALORE	RECORD FORMATS (ISO 9001:2000)
	R/PP04/04	LESSON PLAN

BEE401 –ELECTRIC MOTORS

WEEK	DATE FROM	DATE TO	TOPICS PLANNED
9	10-06-2024	15-06-2024	23. High torque rotors-double cage and deep rot **MODULE-4** 24. **Starting and Speed Control of Three-Phase Induction Motors:** Necessity of starter. Direct online 25. Star-Delta, and autotransformer **June 15th Holiday-3rd Saturday**
10	17-06-2024	22-06-2024	26. Starting. Rotor resistance starting. Speed control by frequency 27. **Single-Phase Induction Motor:** Double revolving field theory and principle of operation 28. Construction and operation of split-phase, capacitor start and capacitor run
11	24-06-2024	29-06-2024	29. Shaded pole motors. Comparison of single phase motors and applications. 30.Problems **MODULE-5** 31. **Synchronous Motor:** Principle of operation
12	1-07-2024	6-07-2024	32. phasor diagrams 33. torque and torque angle 34. Effect of change in load, effect of change in excitation **July 6th -1st Holiday-1st Saturday**
13	8-07-2024	13-07-2024	35. V and inverted V curves. Synchronous condenser 36. **Other Motors:** Construction and operation of Universal motor 37. AC servomotor,
14	15-07-2024	20-07-2024	38 PMSM, SRM 39. Linear induction motor **July 17th –Holiday Muharaam**
15	22-07-2024	27-07-2024	40. BLDC 41.Revision **July 20th Holiday-3rd Saturday**

Prepared by : PRADEEP KUMAR

Designation : Assistant Professor

Signature

Approved by: Dr.H.L. SURESH

Designation : H.O.D.

Signature

09

EVALUATION PATTERN

COURSE NAME/CODE: ELECTRIC MOTORS/BEE401 **SEMESTER: IV**

Assessment Details (both CIE and SEE)
The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%. The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50) and for the SEE minimum passing mark is 35% of the maximum marks (18 out of 50 marks). A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures a minimum of 40% (40 marks out of
100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:
- For the Assignment component of the CIE, there are 25 marks and for the Internal Assessment Test component, there are 25 marks.
- The first test will be administered after 40-50% of the syllabus has been covered, and the second test will be administered after 85-90% of the syllabus has been covered
- Any two assignment methods mentioned in the 22OB2.4, if an assignment is project-based then only one assignment for the course shall be planned. The teacher should not conduct two assignments at the end of the semester if two assignments are planned.
- For the course, CIE marks will be based on a scaled-down sum of two tests and other methods of assessment.

Internal Assessment Test question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

Semester-End Examination:
Theory SEE will be conducted by University as per the scheduled timetable, with common question papers for the course (**duration 03 hours**).
1. The question paper will have ten questions. Each question is set for 20 marks.
2. There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), **should have a mix of topics** under that module.

Course Learning Objectives (CLOs) & Course Outcomes(COs)

Subject Code: BEE401
Subject Name: ELECTRIC MOTORS

Course Learning Objectives (CLOs)

To enable the Students to

CLO 1: Impart in-depth knowledge about the constructional features of Motors and select a Suitable drive for specific application.

CLO 2: Understand the constructional features of 3-phase & 1-phase of Induction Motors.

CLO 3: To study different test to be conducted for the assessment of the performance Characteriscts of motors and the speed control of motors by different methods.

CLO 4: Able to realize the construction and operation of synchronous motors and special motors.

Course Outcome (COs)

Students will able to

CO 1: Able to realize the construction features of motors and the select a suitable drive for specific application.

CO 2: Analyze and access the performance characteristics of dc motors by conducting suitable tests and control the speed by suitable method.

CO 3: Able to realize the constructional features of 3-phase & 1-phase of Induction Motor and access their performance.

CO 4: Control the speed of induction motor by suitable method.

CO5: Be able to explicate the operation of synchronous motor and special motors.

ELECTRIC MOTORS –BEE401
CO AND PO MAPPING

Course Outcomes	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
CO1	3	2			-	-	-	-	-	-	-	-	3	-
	Use fundamental engineering	Identifies,											This provides them with the knowledge to model the electrical system.	
CO2	3	3				-	-	-	-	-	-	-	3	-
	Use fundamental of mathematics and engineering	Identifies, formulates and analysis											This provides them with the knowledge to model the electrical system .	
CO3	3	3				-	-	-	-	-	-	-	3	-
	Strong fundamentals required.	Identifies, formulates and analysis											This provides them with the knowledge to model the electrical system.	
CO4	3	3				-	-	-	-	-	-	-	3	-
	Strong fundamentals required.	Identifies, formulates and analysis.											This provides them with the knowledge to model the electrical system.	

Date | 10 | 06 | 2024 | Subject Code | BEE401 |

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Sir M. Visvesvaraya Institute of Technology
Bangalore 562 157
INTERNAL TEST PAPER

TEST NO : I SEM :IV COURSE / BRANCH : BE /EEE MAX. MARKS : 25 DURATION : 60 Min

SUBJECT : ELECTRIC MOTORS Faculty Name : Pradeep Kumar, Vijaylaxmi A K

Instructions: Answer any one Question from each PART

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI – Performance Indicator

Q.No	Question	Marks	CO	BL	PO	PI
	PART A					
1	a) Derive the expression for torque in a DC motor. explain the characteristics of DC Shunt motors.	6	CO1	L2	PO2	2.1.3
	b) A test on two coupled similar tramway motors, with their fields connected in series, gave the following results when one machine acted as a motor and the other as a generator. Motor: Armature current=56A, Armature Voltage=590V, Voltage drop=40V. Generator: Armature current=44A, Armature Voltage=400V, Voltage drop=40V Resistance of each armature=0.3 ohm. Calculate the efficiency of the motor & generator.	7	CO1	L3	PO2	2.2.1
	OR					
2	a) Explain the Swinburne's test on DC machines.	6	CO1	L2	PO2	2.1.3
	b) A 4 pole, d.c. motor has lap connected armature winding. The flux per pole is 30 mWb. The number of armature conductors is 250. When connected to 230 V d.c. supply it draws an armature current of 40 A. Calculate the back e.m.f. and the speed with which motor is running. Assume armature resistance is 0.6 Ω.	7	CO1	L3	PO2	2.2.1
	PART B					
3	a) Sketch and explain the typical torque slip characteristics of a three phase induction motor.	6	CO2	L1	PO2	2.1.3
	b) Derive the torque equation of a three phase induction motor. and also condition of maximum torque.	6	CO2	L2	PO2	2.1.3
	OR					
4	a) Analytically justify how a rotating field is created in three phase induction motor when a balanced three phase AC Supply.	6	CO2	L1	PO2	2.1.3
	b) A three phase 50Hz ,400v induction motor has 4 poles star connected stator winding. Rotor resistance and reactance per phase are 0.15 ohm and 1 ohm. Full load slip is 5%. Calculate: a. Total torque developed, b. maximum torque, c. Speed at maximum torque. Assume stator to rotor ratio 2:1	6	CO2	L2	PO2	2.1.3

Verified by
QPSC Member
4.6.24

Approved By 4/06/2024
HOD

		2024	Subject Code	BEE401

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Sir M. Visvesvaraya Institute of Technology
Bangalore 562 157
INTERNAL TEST PAPER

TEST NO :	SEM : 3	COURSE / BRANCH :	BE / EEE	MAX. MARKS :	25	DURATION :	60 Min

SUBJECT : ELECTRIC MOTORS Faculty Name : PRADEEP KUMAR

Instructions: Answer any one Question from each PART

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI – Performance Indicator

Q.No	Question	Marks

PART A

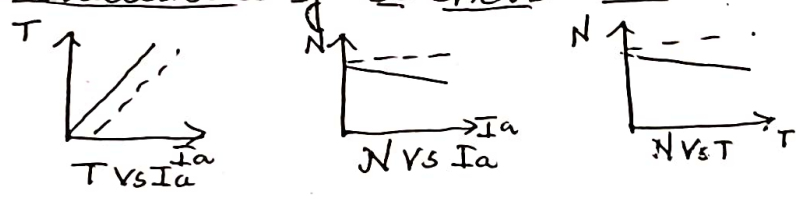
(a) Torque Equation of DC Motor

$P = \frac{F \times 2\pi R}{\frac{60}{N}} = T \times \omega$ → (1M)

$E_b I_a = T \times \frac{2\pi N}{60}$ → (1M)

$T_a = 0.159 \phi I_a \frac{PZ}{A}$ N.m → (1M)

Characteristics of DC Shunt Motor



3 × 1 = (3M)

6

1

(b) Total input = $VI_1 = 630 \times 56 = 35280$ W (1M)

Output = $V_2 I_2 = 400 \times 44 = 17600$ W (1M)

Total losses = 35280 − 17600 = 17680 W

Total cu losses = $(R_a + 2R_{se})I_1^2 + I_2^2 R_a$ = 6001.06 W (1M)

Stray losses = Total losses − cu losses = 5839.47 W (2M)

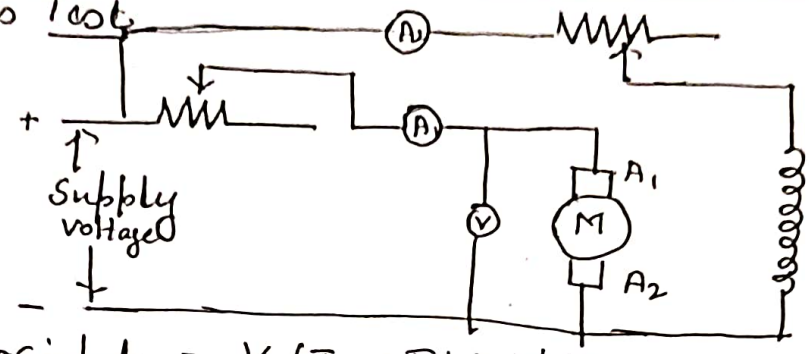
$\eta\%$ of Motor = $\frac{\text{Motor o/p}}{\text{Motor i/p}} \times 100$ = 72.69% (2M)

$\%\eta$ of Generator = $\frac{\text{o/p}}{\text{i/p}} \times 100$ = 67.02% (1M)

7

OR

(a) Swinburne's Test



2M

Power input = $V(I_a + I_{sh})$ Watts

Field copper loss = $V \times I_{sh}$

Armature Cu loss = $I_a^2 R_a$

$\therefore$ Stray losses = $V(I_a + I_{sh}) - (V \times I_{sh}) - I_a^2 R_a = W_c$ (2M)

Explanation – (2M)

6

2

(b)

$P = 4$, $A = P = 4$ $V = 230V$, $Z = 250$ $\phi = 30mWb$

$V = E_b + I_a R_a$ → (1M)

$230 = E_b + 40 \times 0.6$

$E_b = 206V$ → (3M)

$E_b = \dfrac{\phi P N Z}{60A}$

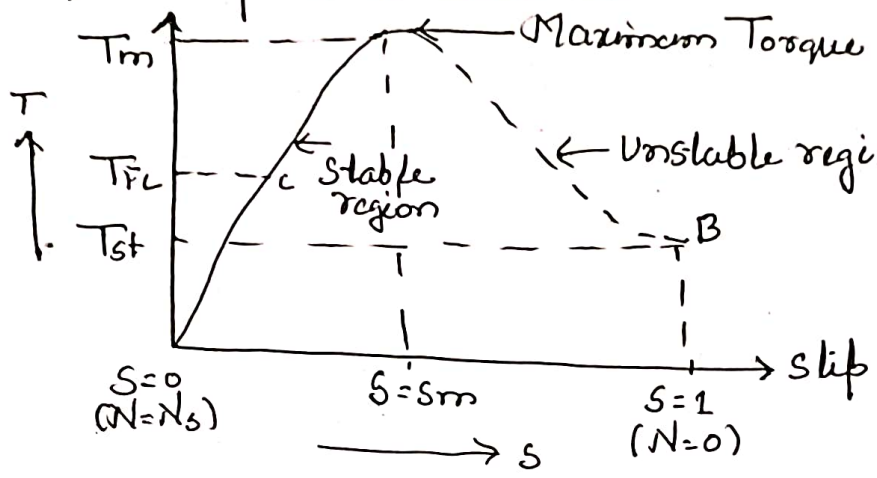
$206 = \dfrac{30 \times 10^{-3} \times 4 \times N \times 250}{60 \times 4}$

$N = 1648$ rpm → (3M)

7

PART B

(a) Torque slip characteristics



3M

Explanation - 3M

6

3 (b) Torque Equation :-

$T \propto \phi I_{2r} \cos\phi_{2r} \rightarrow (1)$ 1M

$\phi \propto E_2 \rightarrow (2)$

$I_{2r} = \frac{E_{2r}}{Z_{2r}} = \frac{sE_2}{\sqrt{R_2^2 + (sX_2)^2}} \rightarrow (3)$ 1M

$\cos\phi_{2r} = \frac{R_2}{Z_{2r}} = \frac{R_2}{\sqrt{R_2^2 + (sX_2)^2}} \rightarrow (4)$ 1M

$T = \frac{3}{2\pi n_s} \cdot \frac{sE_2^2 R_2}{R_2^2 + (sX_2)^2}$ N-m 1M

Maximum condition

$s_m = \frac{R_2}{X_2}$ 1M

$T_m = \frac{kE_2^2}{2X_2}$ N-m 1M

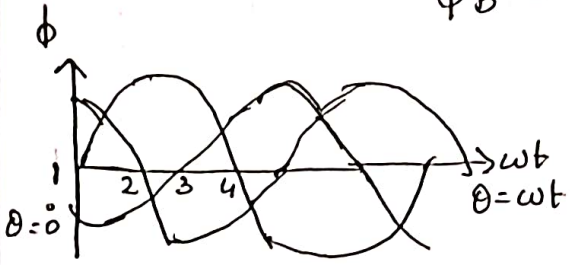
6

(a) Rotating Magnetic field (R.M.F)

$\phi_R = \phi_m \sin\theta \rightarrow ①$

$\phi_Y = \phi_m \sin(\theta - 120^\circ) \rightarrow ②$

$\phi_B = \phi_m \sin(\theta - 240^\circ) \rightarrow ③$



Case $\theta = 0$

$\phi_R = 0$

$\phi_Y = -0.866\,\phi_m$

$\phi_B = +0.866\,\phi_m$

Each case carry (1M) each

6

(b)

$P = 4 \quad f = 50Hz$

$R_2 = 0.15 \quad X_2 = 1.0\Omega$

$E_{line} = 400V$

$E_{ph} = \frac{E_{line}}{\sqrt{3}} = 230.94V$ (1M)

$K = \frac{1}{2}$ (1M) $E_{2ph} = \frac{230.94}{2} = 115.42V$ (1M)

a) Torque developed = 76.39 N-m (1M)

b) Maximum Torque $= \frac{KE_2^2}{2X_2} = 1272.32$ N-m (1M)

c) Speed at maximum Torque

$N = N_s(1 - S_m) = 1275$ r.p.m (1M)

4

6

Date | 27 | 07 | 2024

Subject Code | BEE401

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Sir M. Visvesvaraya Institute of Technology
Bangalore 562 157
INTERNAL TEST PAPER

TEST NO : II SEM :IV COURSE / BRANCH : BE/EEE MAX. MARKS : 25 DURATION : 60 Min

SUBJECT : ELECTRIC MOTORS Faculty Name : Pradeep Kumar, Vijaylaxmi A K

Instructions: Answer any one Question from each PART

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI – Performance Indicator

Q.No	Question	Marks	CO	BL	PO	PI
	PART A					
1	a) Draw and explain the phasor diagram of a three phase induction motor.	6	CO3	L2	PO2	2.1.3
	b) Draw the circle diagram from no load and short circuit test of a 50 KW, 6 pole, 50 Hz, 450 V 3- phase slip ring induction motor furnished the following test data. No load: 450V, 20A, 0.15 p.f S.C test: 200V, 150 A, 0.3 p.f Determine a. Full load current b. Full load slip & c. Efficiency	7	CO3	L3	PO2	2.2.1
	OR					
2	a) With a neat diagram, explain the construction of a deep bar rotor and double cage rotor.	6	CO3	L2	PO2	2.1.3
	b)A 6 pole 50 Hz,3 phase ,induction motor running on full load with 4% slip develops a torque of 149.3 Nm at its pully rim. The friction and windage losses are 200w and the stator copper and iron losses are equal to 1620W calculate: 1.output power 2. Rotor copper losses 3. Efficiency at full load	7	CO3	L3	PO2	2.2.1
	PART B					
3	a) Why starter is necessary for an induction motor? With neat diagram, explain the operation of a Star Delta starter.	6	CO4	L2	PO2	2.1.3
	b) Explain the operation of synchronous motor at constant load variable excitation and v and inverted v curve.	6	CO5	L2	PO2	2.1.3
	OR					
4	a) Explain the capacitor start and capacitor start capacitor run induction motor?	6	CO4	L2	PO2	2.1.3
	b). Explain the construction and operation of a Universal motors and AC servo motor.	6	CO5	L2	PO2	2.1.3

Verified by
QPSC Member

16.07.24

Approved By
HOD 16/7/24

Saturday

Date | | | 2024 | Subject Code | BEE401 |

USN | 1 | M | V | | | | | | | | |

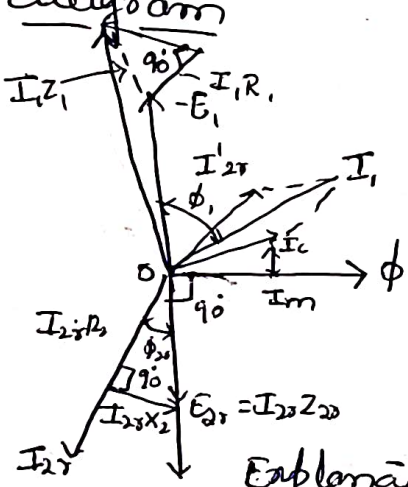
Sir M. Visvesvaraya Institute of Technology
Bangalore 562 157
INTERNAL TEST PAPER

TEST NO : II | SEM : 4 | COURSE / BRANCH : BE / EEE | MAX. MARKS : 25 | DURATION : 60 Min

SUBJECT : ELECTRIC MOTORS | Faculty Name : PRADEEP KUMAR

Instructions: Answer any one Question from each PART

BL – Bloom's Taxonomy Levels (1- Remembering, 2- Understanding, 3 – Applying, 4 – Analyzing, 5 – Evaluating, 6 - Creating)
CO – Course Outcomes PO – Program Outcomes; PI – Performance Indicator

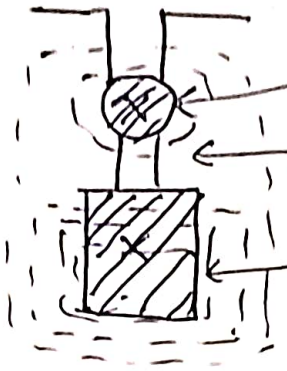
Q.No	Question	Marks
	PART A	
1	(a) Phasor diagram  3M Explanation – 3M	6
1	(b) Circle Diagram – 4M Full load current :- OP x Scale = 30A – 1M Full load slip :- $\frac{QR}{PR}$ = 10.4% – 1M Efficiency :- $\frac{PQ}{PT}$ = 80.75% – 1M	7

Date 2024 Subject Code BEE401

OR

(a)

Duplex Rotor

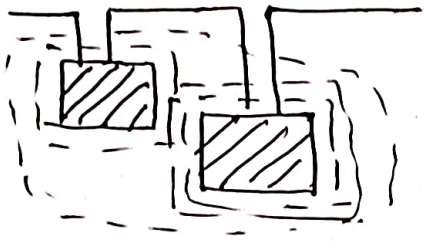


1M

Explanation:- 2M

6

Double Cage Rotor



1M

Explanation:- 2M

2

(b)

$T_{sh} = 149.3\ Nm \quad P = 6 \quad f = 50\ Hz \quad S = 4\% = 0.04$

$N_s = \frac{120f}{P} = 1000\ r.p.m.$ (1M)

$N = N_s(1-S) = 960\ r.p.m$ (1M)

1) $P_{out} = T_{sh} \times \omega = 15.0092\ kW$ (1M)

2) $P_m = P_{out} + \text{Frictional loss} = 15209.2\ W$ (1M)

3) $P_2 = \frac{P_c}{S} = 158429.16\ W$ (2M)

$\%\eta = \frac{P_{out}}{P_{in}} \times 100 = 97.09\%$ (1M)

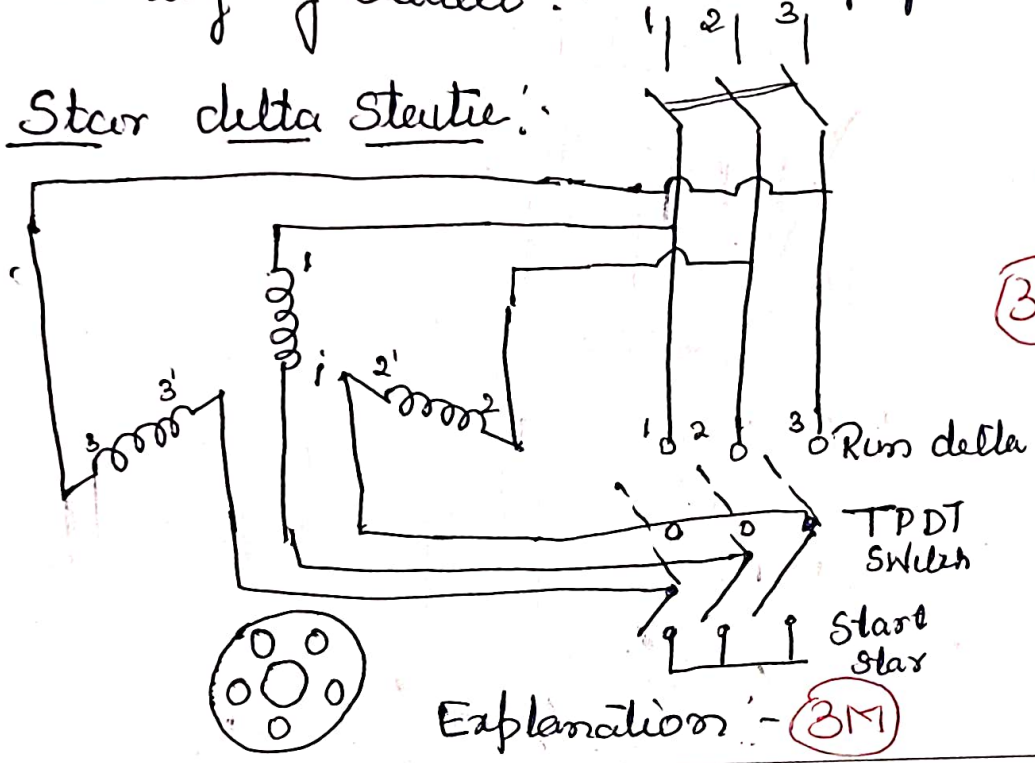
7

Date 2024 Subject Code BEE401

PART B

(a) Necessity of Starter :- 3 Phase Supply

Star delta Starter :-



3M

Explanation - 3M

6

(b) ~~Types of starter~~ -

3

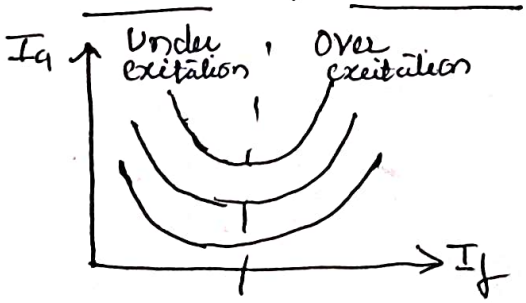
Constant local Variable excitation

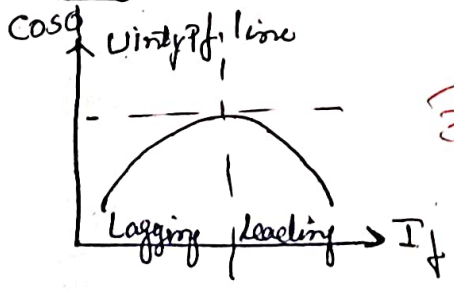
①	Under excitation	Lagging Pf	$E_f < V$
②	Over excitation	Leading Pf	$E_b > V$
③	Critical "	Unity Pf	$E_b \cong V$
④	Normal "	Lagging Pf	$E_f = V$

3M

6

V curve & inverted V curve

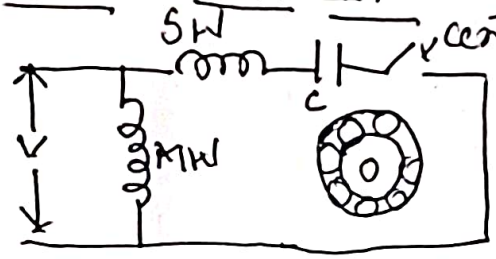




3M

Date | | | 2024 | Subject Code | BEE401 |

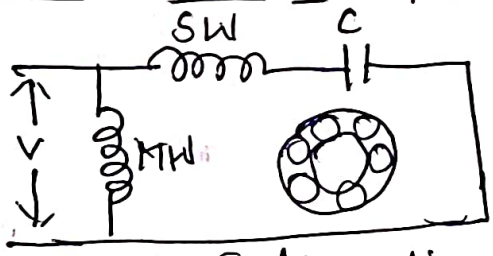
(a) **Capacitor Start IM**



- 2M

Explanation - 1M

Capacitor Start & Capacitor run IM



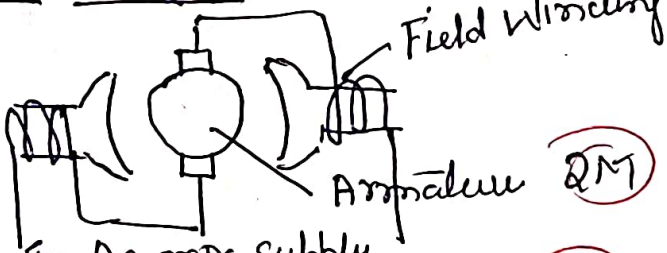
- 2M

Explanation - 1M

6

(b)

4 **Universal Motor**

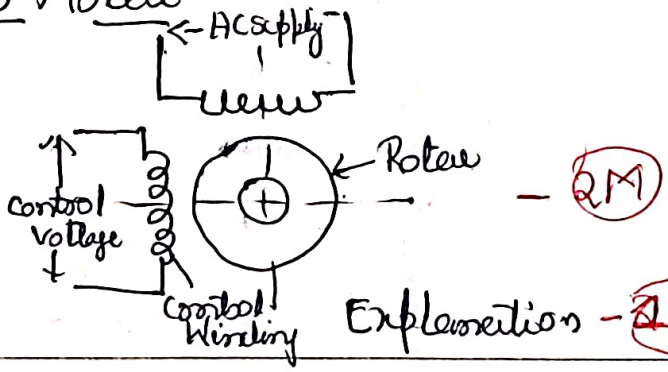


2M

Explanation - 1M

6

AC Servo Motor



- 2M

Explanation - 2M

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157

Academic Year 2023 - 2024

Test: I | Date: 10/06/24 | Time: 9:30 to 10:30 | Room No: NB416

Course / Branch: B.E / EE | Section: B | Semester: IV | Sub Code: BEE401

Invigilator's Name: Pawar Arathi

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV22EE026	NIRANJAN D A	16397	[signature]	07 (08)
2	1MV22EE027	NIZAM UDDIN	16400	[signature]	08
3	1MV22EE029	PRATHIK D GOWDA	16378	[signature]	13
4	1MV22EE032	RAMESH	27834	[signature]	20
5	1MV22EE033	RUSHDA FIRDOSE	16383	[signature]	09
6	1MV22EE034	SACHIN BIRADAR	16371	[signature]	17
7	1MV22EE035	SAHANA B K	16381	[signature]	18
8	1MV22EE036	SANDEEP	16399	[signature]	10
9	1MV22EE037	SANKETH MASKI	16380	[signature]	06
10	1MV22EE038	SARITHA S	16375	[signature]	20
11	1MV22EE041	SNEHA	16370	[signature]	24
12	1MV22EE042	SNEHA BARGALE	16382	[signature]	20
13	1MV22EE043	SOUBHAGYALAXMI SHANTANAND ATANOOR	18927	[signature]	25
14	1MV22EE044	SUDEEP N	16391	[signature]	12
15	1MV22EE045	SUPREETA SURESH ALUR	22320	[signature]	20
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15/15

IV EE

No. of Booklets Issued: 15 | No. of Unused Booklets Returned: 0

No. of Students Present: 15 | No. of Students Absent: 0

Receiver's Name: | Receiver's Signature | Invigilator's Signature [signature]

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157				Academic Year 2023 - 2024
Test: I	Date: 10/06/2024	Time: 9.30 - 10.30		Room No: NB418
Course / Branch: B.E / EE	Section: B	Semester: IV		Sub Code: BEE401
Invigilator's Name: Kantharaj R				

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV22EE046	UDITA SHANKAR	16487		21 (22)
2	1MV22EE048	UNNATI KRISHNANAND SHIRSAT	16		25
3	1MV22EE049	VANDHYA K	16480		25
4	1MV22EE050	VASUDHA HK	16488		24
5	1MV22EE051	VENU P S	16471		25
6	1MV22EE052	VIKAS D	16472		13
7	1MV22EE053	VINAY KUMAR BALAGANUR	16473		18
8	1MV22EE054	VINDHYA K	16475		25
9	1MV22EE055	VISHNU PRIYA N	16477		16
10	1MV22EE057	ZAINAB ISMAIL	16484		19
11	1MV22EE058	VARUN KUMAR S M	16489		03
12	1MV23EE441	MOHAMMADSOHAIL MOHAMMADELIYAS GOVE	16476		19
13	1MV23EE442	NAGENDRA B M	16465	BM	11
14	1MV23EE443	NARESH P	16486		16
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IV EE
14/14
BM

No. of Booklets Issued: 14	No. of Unused Booklets Returned: —
No. of Students Present: 14	No. of Students Absent: Nil
Receiver's Name:	Receiver's Signature / Invigilator's Signature

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157

Academic Year 2023 - 2024

Test: I | Date: 10/06/24 | Time: 9.30-10.30AM | Form No: BT201

Course / Branch: B.E / EE | Section: B | Semester: IV | Sub Code: BEE401

Invigilator's Name: Dr. Chaya. T. Y.

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV23EE462	SANJAY A K	16401		21
2	1MV23EE463	SHESHADHRI	16402		06
3	1MV23EE464	SHRIRAM SARAVANAN	16403		20
4	1MV23EE465	SHRIVATSA T Y	16404		18
5	1MV23EE466	SOWMYA G	16405	Sowmya G.	25
6	1MV23EE467	SUHAS SH	16406	Suhas SH	24
7	1MV23EE468	SUMANTH KUMAR B V	16407	Sumanth B.V	09
8	1MV23EE469	SWAPNA T S	16408	Swapna T S	21 (25)
9	1MV23EE470	SWATHI C	16409	Swathi C	19
10	1MV23EE471	THIPPESWAMY C	16410		05
11	1MV23EE472	VAMSHI S	16411	Vamshi S	17
12	1MV23EE473	VANDANA S	16412	Vandana S	22
13	1MV23EE474	VIDYA HANAMANT KUNDARGI	16413		20
14	1MV23EE475	VISHMITHA J M	16414	Vishmitha	17
15	1MV23EE476	YASHWANTH SJ	16415		20
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15/15

IV B Sec EEE

No. of Booklets Issued: 15 | No. of Unused Booklets Returned: NIL

No. of Students Present: 15 | No. of Students Absent: NIL

Receiver's Name: Dr. Soma Swamy | Receiver's Signature: 10/6/24 | Invigilator's Signature

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157				Academic Year 2023 - 2024
Test: II	Date: 27/7/24		Time: 10-11 AM	Room No: B209
Course / Branch: B.E / EEE	Section: B		Semester: IV	Sub Code: BEE401
Invigilator's Name: Shivaranjini.C				

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV22EE026	NIRANJAN D A	48146	Niranjan	12
2	1MV22EE027	NIZAM UDDIN	48149		21
3	1MV22EE029	PRATHIK D GOWDA	48150		14
4	1MV22EE032	RAMESH	48168		25
5	1MV22EE033	RUSHDA FIRDOSE	48152		17
6	1MV22EE034	SACHIN BIRADAR	48153		24
7	1MV22EE035	SAHANA B K	48151		21
8	1MV22EE036	SANDEEP	48167		07
9	1MV22EE037	SANKETH MASKI	48154		16
10	1MV22EE038	SARITHA S	48169		24
11	1MV22EE041	SNEHA	48170		12
12	1MV22EE042	SNEHA BARGALE	48162		18
13	1MV22EE043	SOUBHAGYALAXMI SHANTANAND ATANOOR	48155	S.S.Atanoor	24
14	1MV22EE044	SUDEEP N	48166		16
15	1MV22EE045	SUPREETA SURESH ALUR	48161		22
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23

15/15 IV EE B BEE401

No. of Booklets Issued: 15	No. of Unused Booklets Returned: NIL
No. of Students Present: 15	No. of Students Absent: NIL
Receiver's Name: Shalini P	Receiver's Signature / Invigilator's Signature

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157			Academic Year 2023 - 2024
Test: 2	Date: 27/7/24	Time: 10 -11 am	Room No: B102
Course / Branch: B.E / EE	Section: B	Semester: IV	Sub Code: BEE401
Invigilator's Name: Vijayashri V. Belgaonkar			

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV23EE444	NIKHIL S P	36192	Nikhil	24
2	1MV23EE445	NIRANJAN BASAVARAJ YARAGATTI	48108	Niranjan	11
3	1MV23EE446	NITHIN N	48105	Nithin N	23
4	1MV23EE447	OMKARESHWARI	36214	Omkareshwari	14
5	1MV23EE448	P SATYA SAI MOHAN	36198	P Satya Sai	25
6	1MV23EE449	PRAJWAL H C	~~36202~~	Prajwal H C	24
7	1MV23EE450	PRASHANTH T V	36194	Prashanth T.V	19
8	1MV23EE451	PRASHANTHA	36201		23
9	1MV23EE452	PRATHVI RAVI NAIK	36203	PRN	25
10	1MV23EE453	PREMARASHI G P	36193	Premarashi G.P.	25
11	1MV23EE454	PRUTHVI RAJ A	36199	A. Pruthvi Raj	00
12	1MV23EE455	PUNEETH B Y	36196	Puneeth B Y	25 ~~25~~
13	1MV23EE456	RIYAZ DAVALASAB KOTABAL	48106	Riyaz	13
14	1MV23EE457	SAGAR ANJANEYA HARIJAN	36204		19
15	1MV23EE458	SANDEEP H N	36195	Sandeep	18
16	1MV23EE459	SANGAMESH	36206	Sangamesh	24
17	1MV23EE460	SANGAMESH ARJUN MURANAL	36191	Sangamesh	21
18	1MV23EE461	SANGAMESH SHANKARAPPA SULLIKERI	48107	SSK	22
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18

18/18

IV - B

BEE401

No. of Booklets Issued: 18	No. of Unused Booklets Returned: — NIL —
No. of Students Present: 18	No. of Students Absent: NIL
Receiver's Name:	Receiver's Signature / Invigilator's Signature

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157

Academic Year 2023 - 2024

Test: II	Date: 27/07/2024	Time: 10-11	Room No: BT201
Course / Branch: B.E / EEE	Section: B	Semester: IV	Sub Code: BEE401
Invigilator's Name: RAMKUMAR B			

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV23EE462	SANJAY A K	36176	[signature]	21
2	1MV23EE463	SHESHADHRI	36171	[signature]	21
3	1MV23EE464	SHRIRAM SARAVANAN	36181	[signature]	13
4	1MV23EE465	SHRIVATSA T Y	36175	[signature]	21
5	1MV23EE466	SOWMYA G	36178	Sowmya G	24
6	1MV23EE467	SUHAS SH	36165	Suhas SH	25
7	1MV23EE468	SUMANTH KUMAR B V	36168	[signature]	20
8	1MV23EE469	SWAPNA T S	36174	Swapna	25
9	1MV23EE470	SWATHI C	36172	Swathi. C	25
10	1MV23EE471	THIPPESWAMY C	36184	[signature]	18
11	1MV23EE472	VAMSHI S	36167	Vamshi S	25
12	1MV23EE473	VANDANA S	36170	Vandana S	25
13	1MV23EE474	VIDYA HANAMANT KUNDARGI	36173	Vidya H K	21
14	1MV23EE475	VISHMITHA J M	36169	[signature]	24
15	1MV23EE476	YASHWANTH SJ	36177	[signature]	22
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4th - EEE - 'B'

15/15

No. of Booklets Issued: 15	No. of Unused Booklets Returned: —
No. of Students Present: 15	No. of Students Absent: —
Receiver's Name: Dr. S. [signature]	Receiver's Signature: [signature] / Invigilator's Signature: [signature]

Subs: Electric Motors.

Sir M. Visvesvaraya Institute of Technology, Bangalore 562 157			Academic Year 2023 - 2024
Test: II	Date: 27/07/2024	Time:	Room No: B207
Course / Branch: B.E / EE	Section: B.	Semester: IV	Sub Code: BEE401
Invigilator's Name: Rekha. B. K.			

Sl. No.	USN	Student's Name	Booklet's Number	Student's Signature	Marks Obtained
1	1MV22EE046	UDITA SHANKAR	36238		22
2	1MV22EE048	UNNATI KRISHNANAND SHIRSAT	36239		25
3	1MV22EE049	VANDHYA K	36240		23
4	1MV22EE050	VASUDHA HK	36241		24
5	1MV22EE051	VENU P S	36242		25 25
6	1MV22EE052	VIKAS D	36243		12
7	1MV22EE053	VINAY KUMAR BALAGANUR	36244		23
8	1MV22EE054	VINDHYA K	36245		24
9	1MV22EE055	VISHNU PRIYA N	36246		23
10	1MV22EE057	ZAINAB ISMAIL	36247		25
11	1MV22EE058	VARUN KUMAR S M	36248		15
12	1MV23EE441	MOHAMMADSOHAIL MOHAMMADELIYAS GOVE	36249		25
13	1MV23EE442	NAGENDRA B M	36250		19
14	1MV23EE443	NARESH P	36223		14
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14 BE B

BEE401

No. of Booklets Issued: — 14 —	No. of Unused Booklets Returned: —
No. of Students Present: — 14 —	No. of Students Absent: Nil
Receiver's Name: Dr PN	Receiver's Signature	Invigilator's Signature

11.00 am	11.55 am	12.50 pm	to 1.35 pm	to 2.30 pm

SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY, Bengaluru
Department of Electrical and Electronics Engineering
COURSE END SURVEY

Student USN	1	M	V	2	2	E	E				CAY : 2023-24
Student Name											EVEN SEMESTER

Course Title: Electric Motors (BEE401) **Semester: IV**

Sl. No	Outcome description	Strongly agree (3)	Agree (2)	Partially agree (1)
1	This course has enabled you to study the construction and operation, characteristics, Testing of DC Motors and determine losses and efficiency.		✓	
2	The course has enabled you study the construction and operation, classification and types of Three phase Induction motors	✓		
3	The course has given an ability to study the Speed Control methods of three phase induction motor and types of single phase induction motors		✓	
4	The course has given an ability to explain the construction and operation, V and inverted V curves of synchronous motors, Construction and operation of Universal motor, AC servomotor, Linear induction motor, PMSM, SRM and BLDC motors.	✓		
5	Handouts/Assignments were useful in improving subject expertise		✓	
6	The methodologies used for teaching the course were comfortable.	✓		
	Signature with date			

SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY, Bengaluru
Department of Electrical and Electronics Engineering
COURSE END SURVEY

Student USN	1	M	V	2	2	E	E				CAY :2023-24
Student Name											EVEN SEMESTER

Course Title: Electric Motors (BEE401) **Semester: IV**

Sl. No	Outcome description	Strongly agree (3)	Agree (2)	Partially agree (1)
1	This course has enabled you to study the construction and operation, characteristics, Testing of DC Motors and determine losses and efficiency.	✓	✓	
2	The course has enabled you study the construction and operation, classification and types of Three phase Induction motors			
3	The course has given an ability to study the Speed Control methods of three phase induction motor and types of single phase induction motors	✓	✓	
4	The course has given an ability to explain the construction and operation, V and inverted V curves of synchronous motors, Construction and operation of Universal motor, AC servomotor, Linear induction motor, PMSM, SRM and BLDC motors.		✓	
5	Handouts/Assignments were useful in improving subject expertise	✓		
6	The methodologies used for teaching the course were comfortable.	✓		
	Signature with date			

SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY, Bengaluru
Department of Electrical and Electronics Engineering
COURSE END SURVEY

Student USN	1	M	V	2	2	E	E				CAY : 2023-24
Student Name											EVEN SEMESTER

Course Title: Electric Motors (BEE401) **Semester: IV**

Sl. No	Outcome description	Strongly agree (3)	Agree (2)	Partially agree (1)
1	This course has enabled you to study the construction and operation, characteristics, Testing of DC Motors and determine losses and efficiency.	✓		
2	The course has enabled you study the construction and operation, classification and types of Three phase Induction motors		✓	
3	The course has given an ability to study the Speed Control methods of three phase induction motor and types of single phase induction motors		✓	
4	The course has given an ability to explain the construction and operation, V and inverted V curves of synchronous motors, Construction and operation of Universal motor, AC servomotor, Linear induction motor, PMSM, SRM and BLDC motors.	✓		
5	Handouts/Assignments were useful in improving subject expertise		✓	
6	The methodologies used for teaching the course were comfortable.		✓	
	Signature with date			

SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY, Bengaluru
Department of Electrical and Electronics Engineering
COURSE END SURVEY

Student USN	1	M	V	2	2	E	E				CAY :2023-24
Student Name											EVEN SEMESTER

Course Title: Electric Motors (BEE401) **Semester: IV**

Sl. No	Outcome description	Strongly agree (3)	Agree (2)	Partially agree (1)
1	This course has enabled you to study the construction and operation, characteristics, Testing of DC Motors and determine losses and efficiency.	✓		
2	The course has enabled you study the construction and operation, classification and types of Three phase Induction motors	✓	✓	
3	The course has given an ability to study the Speed Control methods of three phase induction motor and types of single phase induction motors		✓	
4	The course has given an ability to explain the construction and operation, V and inverted V curves of synchronous motors, Construction and operation of Universal motor, AC servomotor, Linear induction motor, PMSM, SRM and BLDC motors.	✓	✓	
5	Handouts/Assignments were useful in improving subject expertise	✓		
6	The methodologies used for teaching the course were comfortable.	✓		
	Signature with date			

Department of ELECTRICAL ENGG

Attainment of Course Outcome from Course End Survey

Subject Code : 18EE822 Semester : 8

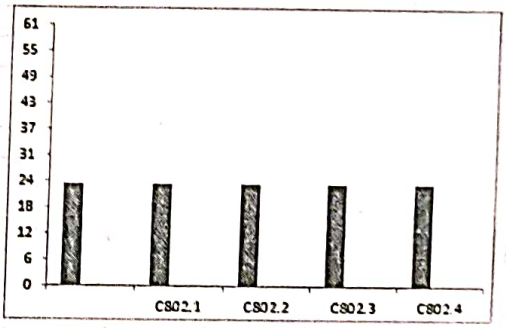
Subject Name : ELECTRICAL ESTIMATION AND COSTING Section : A & B

Faculty Name : PRADEEP KUMAR

Course End Survey

Sl.No.	USN	Students Name	C802.1	C802.2	C802.3	C802.4	C802.5
1	1MV20EE019	CHNANDU J	3	3	3	3	3
2	1MV20EE034	KARTHIK K RATHOD	3	3	3	3	3
3	1MV20EE040	MANJUNATH G C	3	3	3	3	3
4	1MV21EE400	ABHISHEK	3	3	3	3	3
5	1MV21EE402	AMRUTH	3	3	3	3	3
6	1MV21EE405	BALAJI J C	3	3	3	3	3
7	1MV21EE410	JALINDAR	3	3	3	3	3
8	1MV21EE412	LIKITH GOWDA	3	3	3	3	3
9	1MV21EE414	MAHESH K S	3	3	3	3	3
10	1MV21EE415	MANOJ KUMAR L	3	3	3	3	3
11	1MV21EE417	MD NAWAZ	3	3	3	3	3
12	1MV21EE422	NIKHIL MAHESH PATIL	3	3	3	3	3
13	1MV21EE429	RAKSHITHA H	3	3	3	3	3
14	1MV21EE434	SAQEEB PASHA	3	3	3	3	3
15	1MV21EE435	SARASWATI	3	3	3	3	3
16	1MV21EE437	SHARATH KUMAR L	3	3	3	3	3
17	1MV21EE441	SHIVALINGAYYA	3	3	3	3	3
18	1MV21EE442	SRINATH	3	3	3	3	3
19	1MV21EE443	SUCHITHRA	3	3	3	3	3
20	1MV21EE444	SUDEEP PATIL	3	3	3	3	3
21	1MV21EE445	SUHAS R K	3	3	3	3	3
22	1MV21EE446	SUHEB C N	3	3	3	3	3
23	1MV21EE448	UDAY J	3	3	3	3	3
24	1MV21EE450	MD MAKBUL	3	3	3	3	3

Co's	3	2	1	Attainmen
	(80-100%)	(60-79%)	(40-59%)	t
	1	1	1	
C802.1	24	0	0	35
C802.2	24	0	0	35
C802.3	24	0	0	35
C802.4	24	0	0	35
C802.5	24	0	0	35

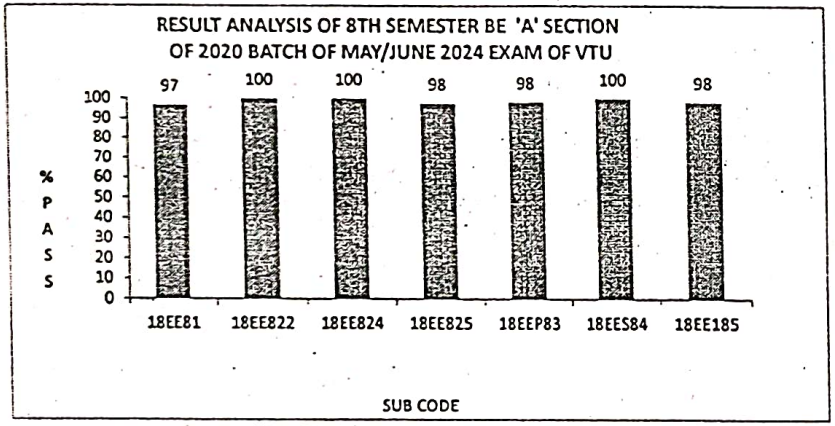


SIR M VISVESVARAYA INSTITUTE OF TECHNOLOGY, BANGALORE - 562 157

RESULT ANALYSIS

DEPARTMENT : ELECTRICAL & ELECTRONICS ENGG
SEMESTER : VIII
SECTION : A
DATE : 31/05/2024
EXAMINATION : May - June 2024
BATCH : 20 BATCH

Sl No	SUBJECT CODE	NAME OF THE SUBJECT	REGULAR				REPEATERS				DIPLOMA QUOTA				TOTAL PASS %				NAME OF THE STAFF
			APP	PASS	Failed	% OF PASS	APP	PASS	Failed	% OF PASS	APP	PASS	Failed	% OF PASS	APP	PASS	Failed	% OF PASS	
1	18EE81	Power System Operation & Control	37	37	0	100	0	0	0	0	24	22	2	92	61	59	2	97	Mrs D Beula
2	18EE822	Electrical Estimation & Costing	2	2	0	100	0	0	0	0	9	9	0	100	11	11	0	100	Mr Pradeep Kumar
3	18EE824	Power System Planning	6	6	0	100	0	0	0	0	0	0	0	0	6	6	0	100	Mr Bhaskar C
4	18EE825	Electrical Power Quality	29	29	0	100	0	0	0	0	15	14	1	93	44	43	1	98	Mr V Rajesh Kumar
5	18EEP83	Project Work Phase -2	37	37	0	100	0	0	0	0	24	23	1	96	61	60	1	98	Dr R Sivapriyan
6	18EES84	Technical Seminar	37	37	0	100	0	0	0	0	24	24	0	100	61	61	0	100	Dr Mahesh K
7	18EE185	Internship	37	37	0	100	0	0	0	0	24	23	1	96	61	60	1	98	Dr C V Mohan



	Freshers	Repeaters	Diploma	Total
Total Appeared	37	0	24	61
FAIL	0	0	2	2
TOTAL PASS	37	0	22	59
PERCENTAGE	100%	0%	92%	97%

31/05/2024

Staff Name PRADEEP KUMAR

Subject Code 18EE822

Subject Name Electrical Estimation & Costing

Targets and Level			
Target		Value	Level
60%	60% and Above	60.0	3
55%	Between 50% to 59%	55.0	2
50%	Below 50%	50.0	1

Test Attainment Level			University Attained		Survey		Attainment
Co's	% Attained	Level	% Attained	Level	% Attained	Level	
C405.1	93.44	3	69.41	3	90.00	3	3.00
C405.2	93.44	3	69.41	3	90.00	3	3.00
C405.3	93.65	3	69.41	3	90.00	3	3.00
C405.4	95.36	3	69.41	3	90.00	3	3.00
C405.5	83.33	3	69.41	3	90.00	3	3.00

Weightage	
Test %	18%
University %	72%
Survey %	10%

Semester	8
Academic Year	2022-23
Class Strength	24
Maximum Marks	100

CONTRIBUTION TO PROGRAMME OUTCOMES (PO's) AND PROGRAM SPECFIC OUTCOMES (PSO's) for Intake Year 2019 for Academic Year 2021-22

CO's			Program Outcomes											Program Specific Outcome			
			PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
C405.1	Mapping		3	3	1										3			
	Attainment	3.00	3.00	3.00	1.00										3.00			

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