



# UNIT TEST



Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**

S.No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune

Department of Mechanical Engineering

Semester-I

Academic Year-2022-23

Date- 21/09/2022

**NOTICE**

All TE, BE students are hereby informed that, UNIT TEST-I of First Semester of Academic Year 2022-23 is scheduled from 26<sup>th</sup> September 2022 to 30<sup>th</sup> September 2022 as per the timetable attached herewith.

Note:

1. Test will be offline descriptive of 30 Marks.
2. Syllabus- Unit No. I & II.
3. Exam will start and end as per scheduled time, duration will be 1hr.
4. Attendance is mandatory.
5. Seating arrangement will be in TE Mech & BE Mech classroom.

Prof. N. D. Bagul

Exam Coordinator

Prof. S. K. Pawar

**HOD**  
**Head of Department**  
Dept. of Mechanical Engineering  
Shri Chh. Shivajiraje College of Engg.  
Dhangawadi, Pune-412206



$\therefore \sin^2 \theta = 1 - \cos^2 \theta$





**Rajgad Dnyanpeeth's**  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**

S.No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune

Department of Mechanical Engineering

Semester-I

Academic Year-2022-23

Date- 21/09/2022

UNIT TEST-I Examination TimeTable

DATE	TIME	SUBJECT	
		TE	BE
26/9/2022	11 AM To 12 NOON	Numerical & Statistical Methods	Heating Ventilation Air-Conditioning and Refrigeration
27/9/2022	11 AM To 12 NOON	Heat & Mass Transfer	Dynamics of Machinery
28/9/2022	11 AM To 12 NOON	Design of Machine Elements	Turbomachinery
29/9/2022	11 AM To 12 NOON	Machining Science & Technology (Elective-I)	Industrial Engineering (Elective-III)
30/9/2022	11 AM To 12 NOON	Mechatronics	Product Design and Development (Elective-IV)

Prof. N. D. Bagul

Exam Coordinator

Prof. S. K. Pawar

**HOD**  
Head of Department  
Dept. of Mechanical Engg.  
Shri Chh. Shivajiraje College of  
Dhangawadi, Pune-412200







Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**  
Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal - Bor, Dist- Pune (Maharashtra)

DEPARTMENT OF MECHANICAL ENGINEERING  
UNIT TEST-I

Class: TE Mechanical  
Subject: Numerical & Statistical Methods  
Time: 1 Hrs

Date: 26/9/2022  
Semester: I  
Max. Marks: 30

**INSTRUCTIONS**

- 1) Assume appropriate data and state your reasons.
- 2) Marks are given to the right of every question
- 3) Draw neat diagrams wherever necessary.

- Q.1 a) Using Newton Raphson method find the real root of the equation  $3x^3 - \cos x + 1 = 0$  correct to four decimal places. [10]
- b) Draw the flowchart for Bi-section method. [5]
- Q.2 a) Solve the following equations using Gauss Elimination method. [10]  
 $2x_1 + 3x_2 + 4x_3 = 11$   
 $9x_1 + 2x_2 - 8x_3 = 1.9$   
 $15x_1 - 8x_2 + 6x_3 = 14.7$
- b) Draw the flowchart for Runge-kutta second order method. [5]

\*\*\*\*\*ALL THE BEST!!!\*\*\*\*\*





Rajgad Dnyanpeeth's  
SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING  
S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -412205 (MS), India.

DEPARTMENT OF MECHANICAL ENGINEERING

Academic Year: 2022- 23, Semester - I

Class : TE (Mechanical)

Day & Date : Monday 26/09/2022

Course: Numerical & Statistical Methods

Max. Marks : 30

Max. Time : 1 Hour

Block No. : --

UNIT TEST-I ATTENDANCE SHEET WITH MARKS

Sr. No.	Roll No.	Name of Student	Attendance	Score
1	TME21F001	BARGE SUMIT DIPAK	P	18
2	TME21F002	DESAI ADARSH DATTATRAY	P	15
3	TME21F003	GURAV SUYOG YOGESH	P	12
4	TME21F004	JADHAV NIKITA SANTOSH	P	14
5	TME21F005	KINDRE SOHAM JAYWANT	P	12
6	TME21F006	PAWAR AKSHAY ARUN	P	13
7	TME21F007	PAWAR PRATIK SOMNATH	P	18
8	TME21F008	PISAL SANIKA NARAYAN	P	30
9	TME21F009	SHAIKH ADIL MUSTAQ	P	15
10	TME21F010	TANPURE KUNAL CHANDRAKANT	P	10
11	TME21F011	TANPURE TEJAS SANDIP	P	14
12	TME21D012	AHIRE YUVRAJ SHRIRANG	P	13
13	TME21D013	BABAR SANDESH JITENDRA	P	12
14	TME21D014	BHALERAO PRAMODKUMAR P.	P	11
15	TME21D015	BHANDARE VISHWAJEET RAJENDRA	P	11
16	TME21D016	BHILARE PRATIK GULAB	P	10
17	TME21D017	DESHMUKH SAURABH RAJENDRA	P	15
18	TME21D018	GADE ABHIJEET JITENDRA	A	0
19	TME21D019	JADHAV OMKAR POPAT	P	14
20	TME21D020	JADHAV VEDANT RAJESH	P	19
21	TME21D021	KAMTHE AJINKYA POPAT	P	15
22	TME21D022	KHAIRE SAURABH RAMDAS	P	12
23	TME21D023	KHANDEKAR MAHESH RAJARAM	P	12
24	TME21D024	KHOPEDE ABHIJIT ASHOK	P	14
25	TME21D025	KOKARE AJAY KAMALAKAR	P	13
26	TME21D026	KOKARE ANKUSH SALU	P	16
27	TME21D027	KULKARNI SANKET SUNIL	P	17
28	TME21D028	KUMBHAR DEEP LAXMAN	P	18
29	TME20D029	KUMBHAR MAHAVIR JALINDAR	P	17
30	TME20D030	KUMBHAR VIKRAM BHANUDAS	P	15
31	TME21D031	KURADE ABHIJEET BAPU	P	11
32	TME20D032	MANDHARE ANIKET SANJAY	P	10
33	TME21D033	MORE DHIRAJ DEVIDAS	P	12



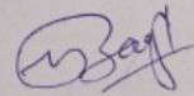
Sr. No.	Roll No.	Name of Student	Attendance	Score
34	TME21D034	NEWASE PRATIK SAMBHAJI	P	9
35	TME21D035	NEVASE SIDDHANT PARMESHWAR	A	0
36	TME21D036	NEVASE SIDDHESH SANJAY	A	0
37	TME21D037	NIMBALKAR PRATIK RAMESH	P	12
38	TME21D038	PILAWARE NILESH DILIP	P	11
39	TME21D039	PIMPALE VISHAL SANJAY	P	10
40	TME21D040	PISAL VIRAJ ASHOK	A	10
41	TME21D041	POL TEJAS ASHOK	P	8
42	TME21D042	PUJARI ASHISH HARISH	A	0
43	TME21D043	RAJIGARE SWAPNIL DILIP	P	15
44	TME21D044	RANAWARE ASHISH ARUN	P	16
45	TME21D045	RAUT VISHAL VILAS	P	11
46	TME21D046	SALUNKHE TANMAY RAMESH	P	17
47	TME21D047	SANGALE OMKAR DATTATRAY	P	12
48	TME21D048	SAWANT DURVESH RAJESH	P	13
49	TME21D049	SHINDE PURSHOTTAM MANSING	A	12
50	TME21D050	SHINDE SHREYASH ANIL	P	18
51	TME21D051	SONKAMBLE NIRAJ PIRAPPA	A	0
52	TME21D052	SURYAWANSHI AJAY BHAUSAHEB	P	30
53	TME21D053	TALEKAR SAURABH SAHADEV	P	11
54	TME21D054	TALWAR RAHUL ANANDRAO	P	17
55	TME21D055	YADAV PRATHMESH HEMANT	P	15
56	TME20D056	PAPAL GANESH SANTOSH	P	14
57	TME20D057	PATEL VIKAS RAMAKANT	P	16
58	TME20D058	WAGHMARE PRIYANKA PHULCHAND	A	0
59	TME20D059	AMRUTE ANKUSH SITARAM	A	0
60	TME21F060	RANJANE NIKHIL LAXMAN	P	15
61	TME20D061	RAUT SHUBHAM ROHIDAS	P	16
62	TME20D062	KHAIRE MANDAR SATISH	P	17

No. Of Students Present: 53

No. Of Students Absent: 09

Total Strength: 62

Subject Incharge Name and Sign :






# Model Answer sheet

## Unit Test-I

॥ प्रथमितो ज्ञानमयः प्रदिवः ॥



RAJGAD DNYANPEETH'S

**Shri Chhatrapati Shivajiraje College of Engineering**

Approved by AICTE, Affiliated to the University of Pune, Recognised by DTE (Govt. of Maharashtra)  
Founder President : Anantrao Thopte MLA, Ex. Education Minister - Maharashtra

Exam Seat No. / Roll No. :-

Center Code :-

Exam Seat No. in Words :-

Day / Date :-

Exam :-

Subject :- Numerical & Statistical Methods

Medium :-

Section :-

Sign. & Date of Invigilator :-

Main Answer Sheet + Supplement = 1 +

=

Q. 1	Q. 2	Q. 3	Q. 4	Q. 5	Q. 6	Q. 7	Q. 8	Total

Q.1) a) Using Newton-Raphson method find the real root of the eqn.  $3x = \cos x + 1$  correct to four decimal places?

Sol<sup>n</sup> - given,  $f(x) = 3x - \cos x - 1$  — (1)

Find derivative of  $f(x) = f'(x)$

$$f'(x) = 3 + \sin x - 0$$

$$\therefore f'(x) = 3 + \sin x \text{ — (2)}$$

Put  $x=0$  &  $x=1$  in eqn (1)

$$\therefore f(x) = 3x - \cos x - 1$$

$$\therefore f(0) = -2$$

$$f(1) = 1.4536$$

$\therefore$  Root lies bet<sup>n</sup>. 0 & 1

$$\text{Let } x_0 = 1$$

By using Newton Raphson method,

$$x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$$

$$\therefore x_{n+1} = x_n - \frac{3x_n - \cos x_n - 1}{3 + \sin x_n}$$

So, Iteration No-1

$$\therefore x_1 = x_0 - \frac{3x_0 - \cos x_0 - 1}{3 + \sin x_0}$$

$$\therefore x_1 = 1 - \frac{3 - \cos(1) - 1}{8 + \sin(1)}$$

b) Dra

$$\therefore x_1 = \underline{0.6201}$$

Iteration no-2  
Put  $n=1$

$$x_2 = x_1 - \frac{3x_1 - \cos x_1 - 1}{8 + \sin x_1}$$

$$\therefore x_2 = \underline{0.6072}$$

Iteration no-3

Put  $n=2$

$$\therefore x_3 = x_2 - \frac{3x_2 - \cos x_2 - 1}{8 + \sin x_2}$$

$$\therefore x_3 = \underline{0.6071}$$

Iteration no-4

$$\therefore x_4 = x_3 - \frac{3x_3 - \cos x_3 - 1}{8 + \sin x_3}$$

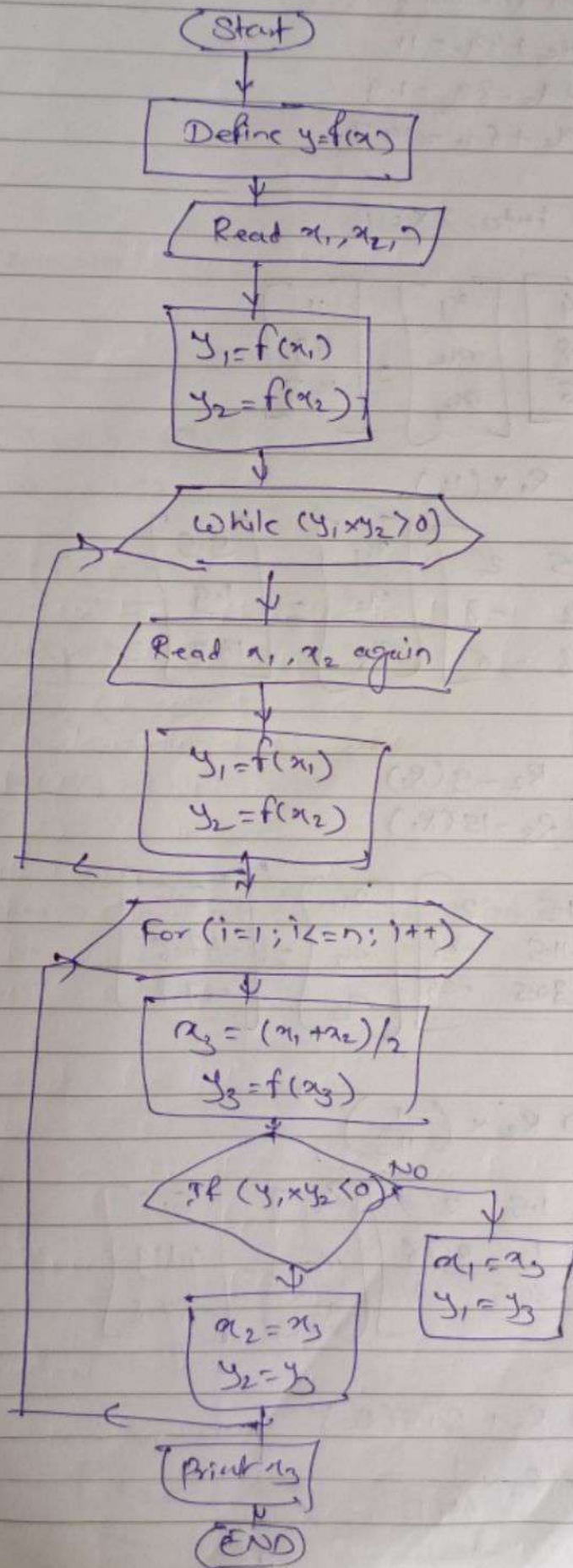
$$\therefore x_4 = \underline{0.6071}$$

Hence desired root is 0.6071 correct to 4<sup>th</sup> decimal place

b)  $\oplus$



b) Draw the flow chart for Bi-section method -





Q. 2) a) Solve the following equations using Gauss Elimination method

$$2x_1 + 3x_2 + 4x_3 = 11$$

$$3x_1 + 2x_2 - 8x_3 = 1.9$$

$$15x_1 - 8x_2 + 6x_3 = 14.7$$

Soln:- 1) Convert into  $AX = B$

$$\begin{bmatrix} 2 & 3 & 4 \\ 3 & 2 & -8 \\ 15 & -8 & 6 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 11 \\ 1.9 \\ 14.7 \end{bmatrix}$$

2)  $R_1 \Rightarrow R_1 \times (1/2)$

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 3 & 2 & -8 \\ 15 & -8 & 6 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ 1.9 \\ 14.7 \end{bmatrix}$$

3)  $R_2 \Rightarrow R_2 - 3(R_1)$

$R_3 \Rightarrow R_3 - 15(R_1)$

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 0 & -11.5 & -26 \\ 0 & -30.5 & -24 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ -47.6 \\ -67.8 \end{bmatrix} \quad b)$$

4)  $R_2 \Rightarrow R_2 \times \left(-\frac{1}{11.5}\right)$

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 0 & 1 & 2.26 \\ 0 & -30.5 & -24 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ 4.139 \\ -67.8 \end{bmatrix}$$

5)  $R_3 \Rightarrow R_3 + 30.5(R_2)$

$$R_3 \Rightarrow R_3 \times \frac{1}{44.93}$$

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 0 & 1 & 2.26 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ 4.139 \\ 1.3 \end{bmatrix}$$

Apply Backward substitution  
we get

$$\boxed{x_3 = 1.3} \quad \text{--- (1)}$$

$$x_2 + 2.26x_3 = 4.139$$

$$x_1 + 1.5x_2 + 2x_3 = 5.5$$

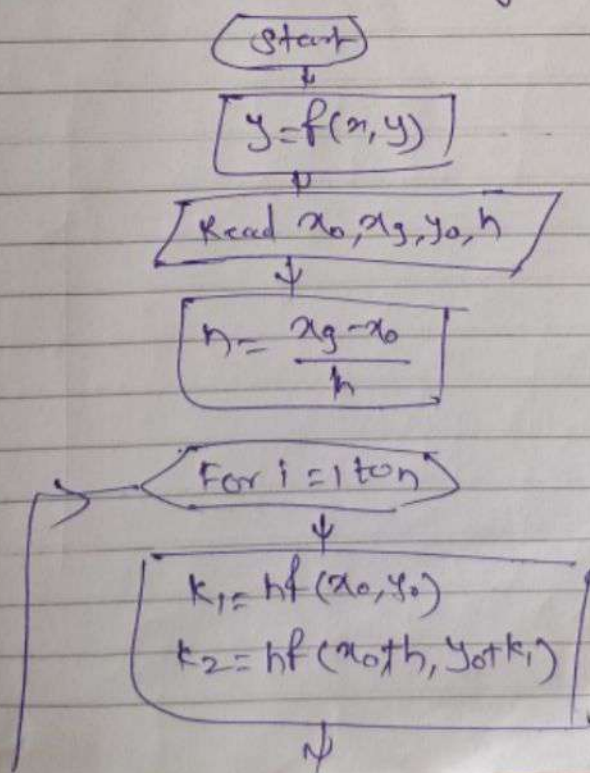
$$\therefore \boxed{x_2 = 1.2} \quad \text{--- (2)}$$

$$x_1 + 1.5(1.2) + 2(1.3) = 5.5$$

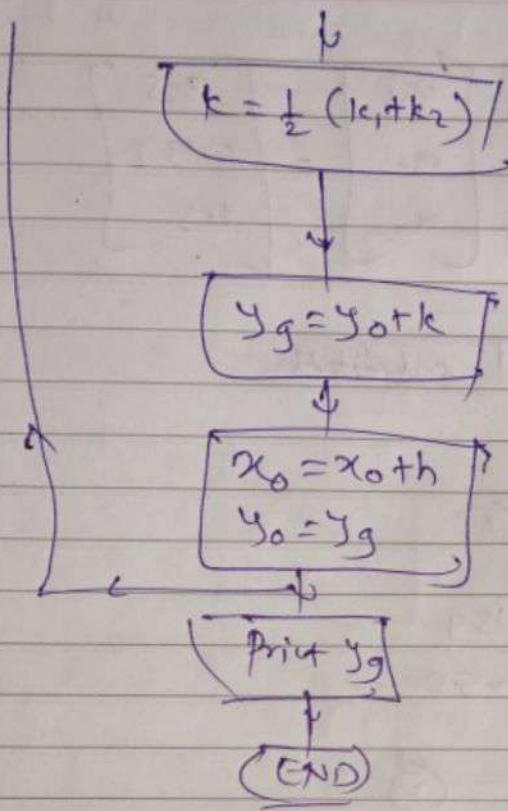
$$\therefore \boxed{x_1 = 1.1}$$

$$\text{Ans} \Rightarrow x_1 = 1.1, x_2 = 1.2, x_3 = 1.3$$

b) Draw a flowchart for Runge-Kutta second order method?











Exam Seat No. / Roll No. :- TME21F008

Center Code :- 4071

Exam Seat No. in Words :- TME Two One F Zero zero Eight

Day / Date :- 26/09/2022

Exam :- Unit Test - I

Subject :- Numerical & Statistical  
Methods

Medium :- English

Section :-

Sign. &amp; Date of Invigilator :-

Main Answer Sheet + Supplement = 1 +

 = 

Q. 1	Q. 2	Q. 3	Q. 4	Q. 5	Q. 6	Q. 7	Q. 8	Total
15	15							30
15	15							30

Q.11) Using Newton's Raphson method find the near root of the eqn  $Bx = \cos x + 1$  correct to four decimal places?

⇒ Soln :-  $f(x) = Bx - \cos x - 1$  — (1)  
 find derivative of  $f(x) = f'(x)$   
 $f'(x) = B + \sin x - 0$

∴  $f'(x) = B + \sin x$  — (2)

Put  $x=0$  and  $x=1$  in eqn (1)

∴  $f(0) = Bx - \cos x - 1$

∴  $f(0) = -2$

$f(1) = 1.4596$

∴ Root lies bet<sup>n</sup> 0 and 1.

Let  $x_0 = 1$ .

By using Newton's Raphson method,  
 $x_{n+1} = x_n - \frac{f(x_n)}{f'(x_n)}$

∴  $x_{n+1} = x_n - \frac{Bx_n - \cos x_n - 1}{B + \sin x_n}$

∴ Iteration No 01.

∴  $x_1 = x_0 - \frac{Bx_0 - \cos x_0 - 1}{B + \sin x_0}$



$$\therefore x_{n1} = \frac{1 - \beta - \cos(n-1)}{\beta + \sin(n)}$$

$$\therefore x_{n1} = 0.6201$$

Iteration No: 02.

Put  $n=1$ .

$$x_{n2} = x_{n1} - \frac{\beta x_{n1} - \cos x_{n1}}{\beta + \sin x_{n1}}$$

$$\therefore x_{n2} = 0.6072$$

Iteration No: 03.

Put  $n=2$ .

$$\therefore x_{n3} = x_{n2} - \frac{\beta x_{n2} - \cos x_{n2}}{\beta + \sin x_{n2}}$$

$$\therefore x_{n3} = 0.6071$$

Iteration No: 04.

$$\therefore x_{n4} = x_{n3} - \frac{\beta x_{n3} - \cos x_{n3}}{\beta + \sin x_{n3}}$$

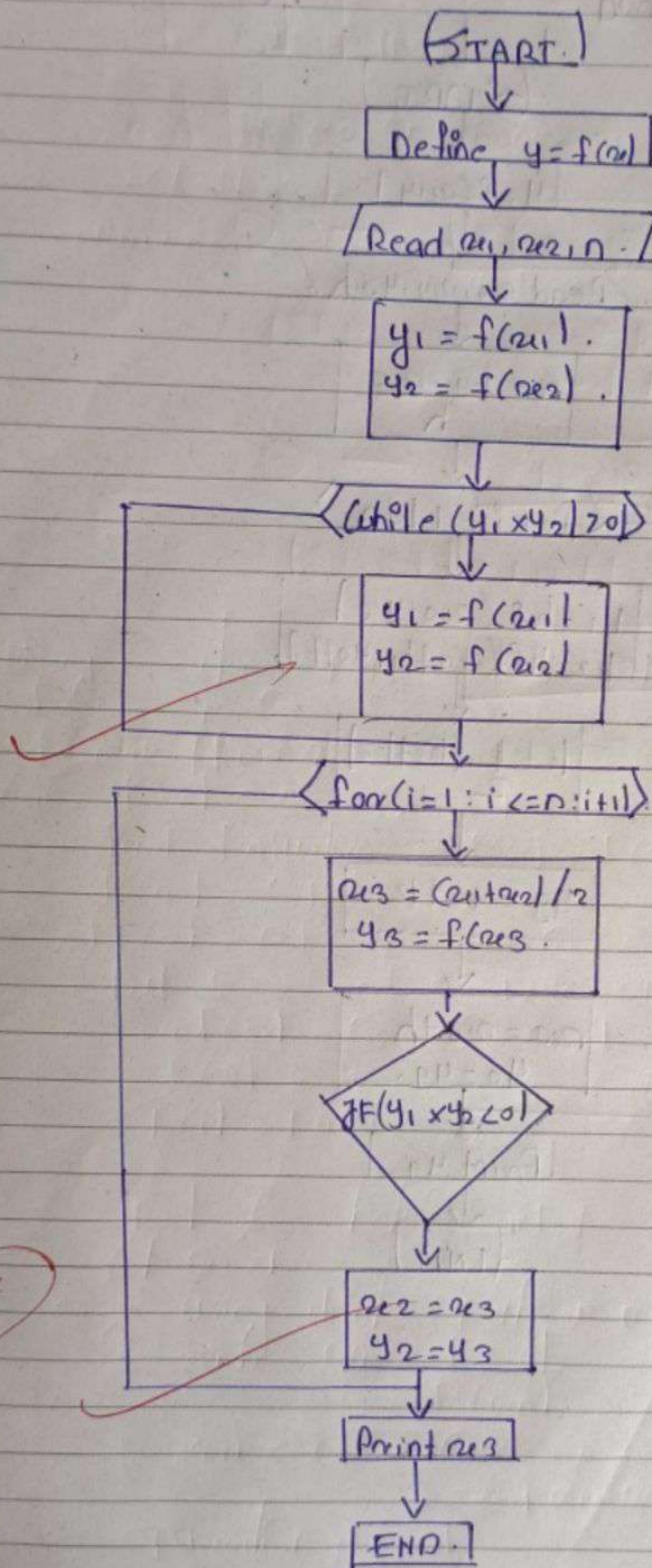
$$\therefore x_{n4} = 0.6071$$

Hence derived root is 0.6071 correct to 4<sup>th</sup> decimal place.

10/10



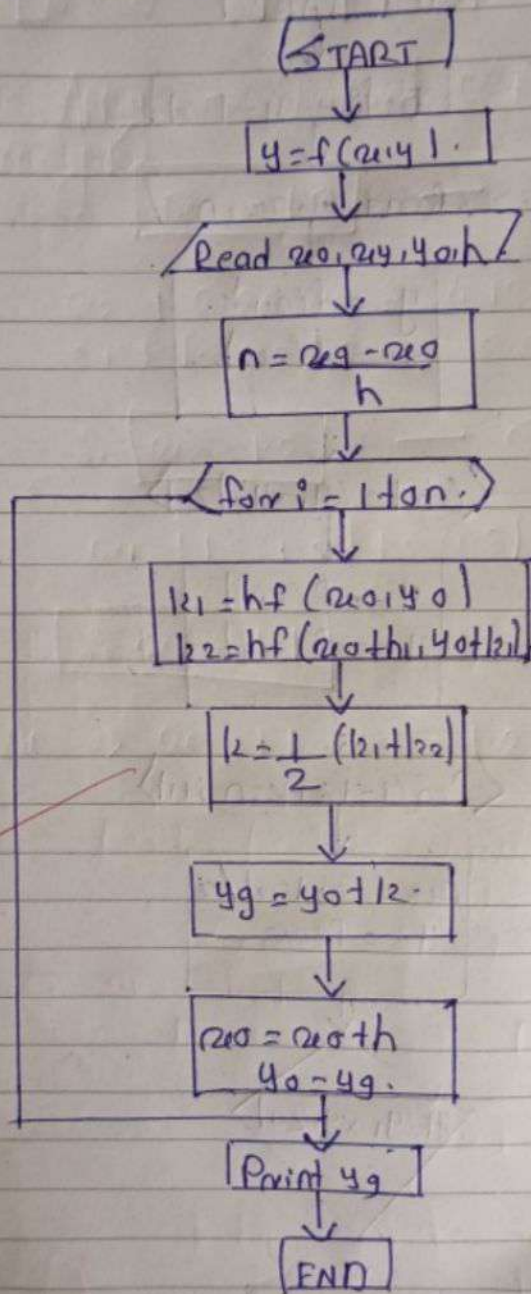
b) Draw the flow chart for Bisection method.



5/5



Q.21 b) Draw a flowchart for Range-kutta Second order method.



5/5

a) Solve the following equations using Gauss Elimination method.

$$2x_1 + 3x_2 + 4x_3 = 11$$

$$9x_1 + 2x_2 + 8x_3 = 1.9$$

$$15x_1 - 8x_2 + 6x_3 = 14.7$$

⇒ Soln: 1) Convert into  $Ax = B$ .

$$\begin{bmatrix} 2 & 3 & 4 \\ 9 & 2 & -8 \\ 15 & -8 & 6 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 11 \\ 1.9 \\ 14.7 \end{bmatrix}$$

2)  $R_1 \Rightarrow R_1 \times (1/2)$ .

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 9 & 2 & -8 \\ 15 & -8 & 6 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ 1.9 \\ 14.7 \end{bmatrix}$$

3)  $R_2 \Rightarrow R_2 - 9(R_1)$ .

$R_3 \Rightarrow R_3 - 15(R_1)$ .

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 0 & -11.5 & -26 \\ 0 & -30.5 & -24 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ -47.6 \\ -67.8 \end{bmatrix}$$

4)  $R_2 \Rightarrow R_2 \times \left( \frac{-1}{11.5} \right)$

$$\begin{bmatrix} 1 & 1.5 & 2 \\ 0 & 1 & 2.26 \\ 0 & -30.5 & -24 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ 4.159 \\ -67.8 \end{bmatrix}$$

5)  $R_3 \Rightarrow R_3 + 30.5(R_2)$ .

$R_3 \Rightarrow R_3 \times \frac{1}{44.93}$



$$\begin{bmatrix} 1 & 1.5 & 2 \\ 0 & 1 & 2.26 \\ 0 & 0 & 1 \end{bmatrix} \begin{bmatrix} x_1 \\ x_2 \\ x_3 \end{bmatrix} = \begin{bmatrix} 5.5 \\ 4.139 \\ 1.3 \end{bmatrix}$$

Apply Backward Substitution.  
We get,  $x_3 = 1.3$  — (1)

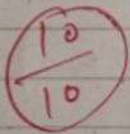
$$x_2 + 2.26 x_3 = 4.139$$

$$x_1 + 1.5 x_2 + 2 x_3 = 5.5$$

$$\therefore x_2 = 1.2$$
 — (2)

$$x_1 + 1.5(1.2) + 2(1.3) = 5.5$$

$$\therefore x_1 = 1.1$$



Ans  $\Rightarrow x_1 = 1.1, x_2 = 1.2, x_3 = 1.3$ .



**PRELIUM**

**EXAM**





Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**  
S.No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune

Department of Mechanical Engineering

Semester-I

Academic Year-2022-23

Date- 1/11/2022

**NOTICE**

All SE, TE, BE students are hereby informed that, Prelim Exam of First Semester of Academic Year 2022-23 is scheduled from 7<sup>th</sup> November 2022 to 11<sup>th</sup> November 2022 as per the timetable attached herewith.

Note:

1. Test will be of 60 Marks.
2. Syllabus- SE, TE & BE - Unit No. III, IV, V & VI.
3. Exam will start and end as per scheduled time, duration will be 2hr.

Prof. N. D. Bagul  
Exam Coordinator

Prof. S. K. Pawar  
**HOD**  
**Head of Department**  
Dept. of Mechanical Engineering  
Shri Chh. Shivajiraje College of Engg.  
Dhangawadi, Pune-412206





Rajgad Dnyanpeeth's  
SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

S.No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune

Department of Mechanical Engineering

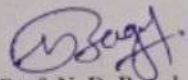
Semester-I

Academic Year-2022-23

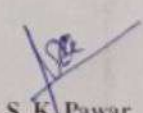
Date- 1/11/2022

PRELIM Examination TimeTable

Date	Time	Subject		
		SE	TE	BE
7/11/2022	11.00 AM To 1.00PM	Solid Mechanics	Numerical & Statistical Methods	Heating Ventilation Air-Conditioning and Refrigeration
8/11/2022	11.00 AM To 1.00PM	Solid Modeling and Drafting	Heat & Mass Transfer	Dynamics of Machinery
9/11/2022	11.00 AM To 1.00PM	Engineering Thermodynamics	Design of Machine Elements	Turbomachinery
10/11/2022	11.00 AM To 1.00PM	Engineering Materials and Metallurgy	Mechatronics	Industrial Engineering (Elective-III)
11/11/2022	11.00 AM To 12.00 Noon	Electrical and Electronics Engineering	Machining Science & Technology (Elective I)	Product Design and Development (Elective-IV)

  
Prof. N. D. Bagul

Exam Coordinator

  
Prof. S. K. Pawar

HOD  
Head of Department  
Dept. of Mechanical Engineering  
Shri Chhatrapati Shivajiraje College of Engg.  
Dhangawadi, Pune-412206



$$x_1 = x_0 + 7h = 0 + 7 \times 0.1 = 0.7$$





Rajgad Dnyanpeeth's  
SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING  
Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal - Bhor, Dist- Pune (Maharashtra)

DEPARTMENT OF MECHANICAL ENGINEERING  
PRELIM EXAM

Class: TE Mechanical  
Subject: Numerical & Statistical Methods  
Time: 2 Hrs

Date:  
Semester: I  
Max. Marks: 60

INSTRUCTIONS

- 1) Assume appropriate data and state your reasons.
- 2) Marks are given to the right of every question
- 3) Draw neat diagrams wherever necessary.

Q.1 a) Evaluate  $\int_0^{0.8} (\log_e(x+1) + \sin(2x)) dx$  where x is in radians. Using Simpson's 1/3<sup>rd</sup> rule, divide the entire interval in 8 strips. [10]

b) Write a flow chart for Simpson's 3/8<sup>th</sup> rule. [5]

Q.2 a) Draw flowchart for the equation  $y = ab^x$  [5]

b) Following is the table of square roots. Calculate the values of  $\sqrt{151}$  and  $\sqrt{155}$  by Newton's interpolation formula [10]

X	150	152	154	156
$Y = \sqrt{X}$	12.247	12.329	12.410	12.490

Q.3 a) Find the coefficient of correlation from the data given below [10]

X	62	64	65	69	70	71	72	74
Y	126	125	139	145	165	152	180	208



$$x_7 = x_0 + 7h = 0 + 7 \times 0.1 = 0.7$$



Rajgad Dnyanpeeth's  
SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING  
S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -412205 (MS), India.

DEPARTMENT OF MECHANICAL ENGINEERING

Academic Year: 2022- 23, Semester - I

Class : TE (Mechanical)

Day & Date : Monday 7/11/2022

Course: Numerical & Statistical Methods

Max. Marks : 60

Max. Time : 2 Hour

Block No. : --

PRELIM EXAM ATTENDANCE SHEET WITH MARKS

Sr. No.	Roll No.	Name of Student	Attendance	Score
1	TME21F001	BARGE SUMIT DIPAK	P	36
2	TME21F002	DESAI ADARSH DATTATRAY	P	30
3	TME21F003	GURAV SUYOG YOGESH	P	24
4	TME21F004	JADHAV NIKITA SANTOSH	P	28
5	TME21F005	KINDRE SOHAM JAYWANT	P	24
6	TME21F006	PAWAR AKSHAY ARUN	P	26
7	TME21F007	PAWAR PRATIK SOMNATH	P	36
8	TME21F008	PISAL SANIKA NARAYAN	P	56
9	TME21F009	SHAIKH ADIL MUSTAQ	P	30
10	TME21F010	TANPURE KUNAL CHANDRAKANT	P	20
11	TME21F011	TANPURE TEJAS SANDIP	P	28
12	TME21D012	AHIRE YUVRAJ SHRIRANG	P	26
13	TME21D013	BABAR SANDESH JITENDRA	P	24
14	TME21D014	BHALERAO PRAMODKUMAR P.	P	22
15	TME21D015	BHANDARE VISHWAJEET RAJENDRA	P	22
16	TME21D016	BHILARE PRATIK GULAB	P	20
17	TME21D017	DESHMUKH SAURABH RAJENDRA	P	30
18	TME21D018	GADE ABHIJEET JITENDRA	A	0
19	TME21D019	JADHAV OMKAR POPAT	P	28
20	TME21D020	JADHAV VEDANT RAJESH	P	38
21	TME21D021	KAMTHE AJINKYA POPAT	P	30
22	TME21D022	KHAIRE SAURABH RAMDAS	P	24
23	TME21D023	KHANDEKAR MAHESH RAJARAM	P	24
24	TME21D024	KHOPADE ABHIJIT ASHOK	P	28
25	TME21D025	KOKARE AJAY KAMALAKAR	P	26
26	TME21D026	KOKARE ANKUSH SALU	P	32
27	TME21D027	KULKARNI SANKET SUNIL	P	34
28	TME21D028	KUMBHAR DEEP LAXMAN	P	36
29	TME20D029	KUMBHAR MAHAVIR JALINDAR	P	34
30	TME20D030	KUMBHAR VIKRAM BHANUDAS	P	30
31	TME21D031	KURADE ABHIJEET BAPU	P	22
32	TME20D032	MANDHARE ANIKET SANJAY	P	20
33	TME21D033	MORE DHIRAJ DEVIDAS	P	24

$$x_7 = x_0 + 7h = 0 + 7 \times 0.1 = 0.7$$

$$x_8 = x_0 + 8h = 0 + 8 \times 0.1 = 0.8$$



Sr. No.	Roll No.	Name of Student	Attendance	Score
34	TME21D034	NEWASE PRATIK SAMBHAJI	P	18
35	TME21D035	NEVASE SIDDHANT PARMESHWAR	A	0
36	TME21D036	NEVASE SIDDHESH SANJAY	A	0
37	TME21D037	NIMBALKAR PRATIK RAMESH	P	24
38	TME21D038	PILAWARE NILESH DILIP	P	22
39	TME21D039	PIMPALE VISHAL SANJAY	P	20
40	TME21D040	PISAL VIRAJ ASHOK	A	20
41	TME21D041	POL TEJAS ASHOK	P	16
42	TME21D042	PUJARI ASHISH HARISH	P	19
43	TME21D043	RAJIGARE SWAPNIL DILIP	P	30
44	TME21D044	RANAWARE ASHISH ARUN	P	32
45	TME21D045	RAUT VISHAL VILAS	P	22
46	TME21D046	SALUNKHE TANMAY RAMESH	P	34
47	TME21D047	SANGALE OMKAR DATTATRAY	P	24
48	TME21D048	SAWANT DURVESH RAJESH	P	26
49	TME21D049	SHINDE PURSHOTTAM MANSING	A	24
50	TME21D050	SHINDE SHREYASH ANIL	P	36
51	TME21D051	SONKAMBLE NIRAJ PIRAPPA	P	22
52	TME21D052	SURYAWANSHI AJAY BHAUSAHEB	P	54
53	TME21D053	TALEKAR SAURABH SAHADEV	P	22
54	TME21D054	TALWAR RAHUL ANANDRAO	A	0
55	TME21D055	YADAV PRATHMESH HEMANT	P	30
56	TME20D056	PAPAL GANESH SANTOSH	P	28
57	TME20D057	PATEL VIKAS RAMAKANT	P	32
58	TME20D058	WAGHMARE PRIYANKA PHULCHAND	P	20
59	TME20D059	AMRUTE ANKUSH SITARAM	P	17
60	TME21F060	RANJANE NIKHIL LAXMAN	P	25
61	TME20D061	RAUT SHUBHAM ROHIDAS	P	22
62	TME20D062	KHAIRE MANDAR SATISH	P	27

No. Of Students Present: 56

No. Of Students Absent: 06

Total Strength: 62

Subject Incharge Name and Sign :

*(Signature)*



# Model Answer Sheet

॥ प्रथमिको इत्ययम्, प्रथमः ॥



Prelim Exam  
RAJGAD DNYANPEETH'S

**Shri Chhatrapati Shivajiraje College of Engineering**

Approved by AICTE, Affiliated to the University of Pune, Recognised by DTE (Govt. of Maharashtra)  
Founder President : Anantrao Thopte MLA, Ex. Education Minister - Maharashtra

Exam Seat No. / Roll No. :-

Center Code :-

Exam Seat No. in Words :-

Day / Date :- Exam :-

Subject :- Numerical & Statistical Methods Medium :-

Section :- Sign. & Date of Invigilator :-

Main Answer Sheet + Supplement = 1 +  =

Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	Total

Q.1) a] Evaluate  $\int_0^{0.8} (\log_e(x+1) + \sin(2x)) dx$  where  $x$  is in radians. using Simpson's 1/3 rule divide the entire interval in 8 strips?

→  $y = f(x) = \log_e(x+1) + \sin(2x)$

$$x_0 = 0, \quad x_n = 0.8, \quad n = 8$$

St-1) calculate step size  $h$

$$h = \frac{x_n - x_0}{n} = \frac{0.8 - 0}{8}$$

$$h = 0.1$$

St-2) find successive values of  $x$

$$x_0 = 0, \quad x_1 = x_0 + 1h = 0 + 1 \times 0.1 = 0.1$$

$$x_2 = x_0 + 2h = 0 + 2 \times 0.1 = 0.2$$

$$x_3 = x_0 + 3h = 0 + 3 \times 0.1 = 0.3$$

$$x_4 = x_0 + 4h = 0 + 4 \times 0.1 = 0.4$$

$$x_5 = x_0 + 5h = 0 + 5 \times 0.1 = 0.5$$

$$x_6 = x_0 + 6h = 0 + 6 \times 0.1 = 0.6$$

$$x_7 = x_0 + 7h = 0 + 7 \times 0.1 = 0.7$$

$$x_8 = x_n = x_0 + 8h = 0 + 8 \times 0.1 = 0.8$$



St-3: Find corresponding values of y

$$y = f(x) = \log_e(x+1) + \sin(2x)$$

.1)b

1)  $y_0 = f(x_0) = f(0)$

$$y_0 = \log_e(0+1) + \sin(2 \times 0)$$

$$y_0 = \log_e(1) + \sin(0)$$

$$y_0 = 0$$

2)  $y_1 = f(x_1) = f(0.1) = \log_e(x_1+1) + \sin(2x_1)$

$$y_1 = \log_e(0.1+1) + \sin(2 \times 0.1) = 0.2400$$

3)  $y_2 = f(x_2) = f(0.2) = \log_e(0.2+1) + \sin(2 \times 0.2)$

$$y_2 = 0.4685$$

4)  $y_3 = f(x_3) = f(0.3) = \log_e(0.3+1) + \sin(2 \times 0.3)$

$$y_3 = 0.6785$$

5)  $y_4 = f(x_4) = f(0.4) = \log_e(0.4+1) + \sin(2 \times 0.4)$

$$y_4 = 0.8634$$

6)  $y_5 = f(x_5) = f(0.5) = \log_e(0.5+1) + \sin(2 \times 0.5)$

$$y_5 = 1.0175$$

7)  $y_6 = f(x_6) = f(0.6) = \log_e(0.6+1) + \sin(2 \times 0.6)$

$$y_6 = 1.1361$$

8)  $y_7 = f(x_7) = f(0.7) = \log_e(0.7+1) + \sin(2 \times 0.7)$

$$y_7 = 1.2158$$

9)  $y_8 = f(x_8) = f(0.8) = \log_e(0.8+1) + \sin(2 \times 0.8)$

$$y_8 = 1.2548$$

St-4 :-

According to Simpson's 1/3 rule area A is given by

$$A = A_1 + A_2 + A_3 + \dots + A_n \quad \text{or}$$

$$A = \frac{h}{3} [(y_0 + y_n) + 4(y_1 + y_3 + y_5 + \dots + y_{n-1})$$

$$+ 2(y_2 + y_4 + y_6 + \dots + y_{n-2})]$$

$$= \frac{0.1}{3} [(0 + 1.2548) + 4(0.2400 + 0.6785 +$$

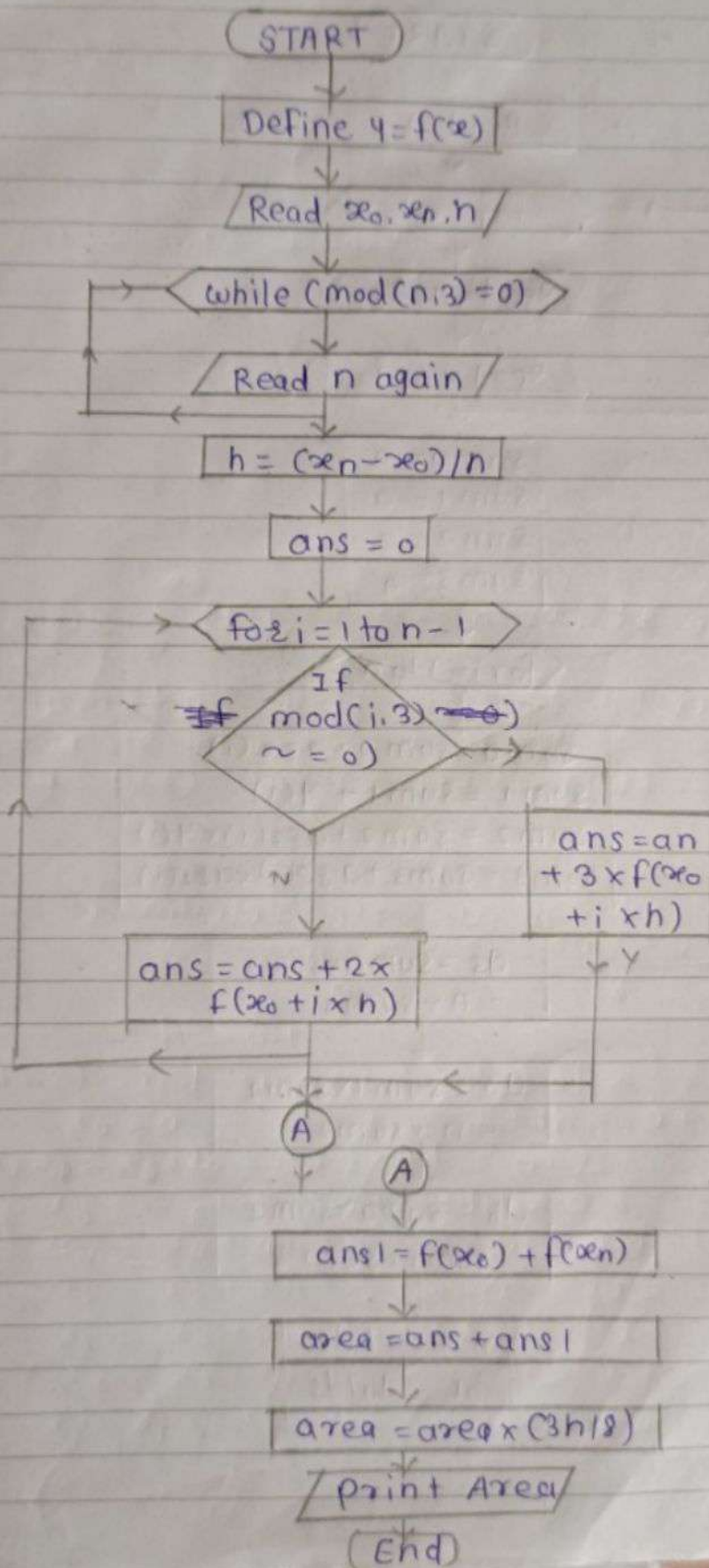
$$+ 1.0175 + 1.2158) + 2(0.4685 +$$

$$+ 0.8634 + 1.1361)]$$

$$\therefore A = 0.23497$$

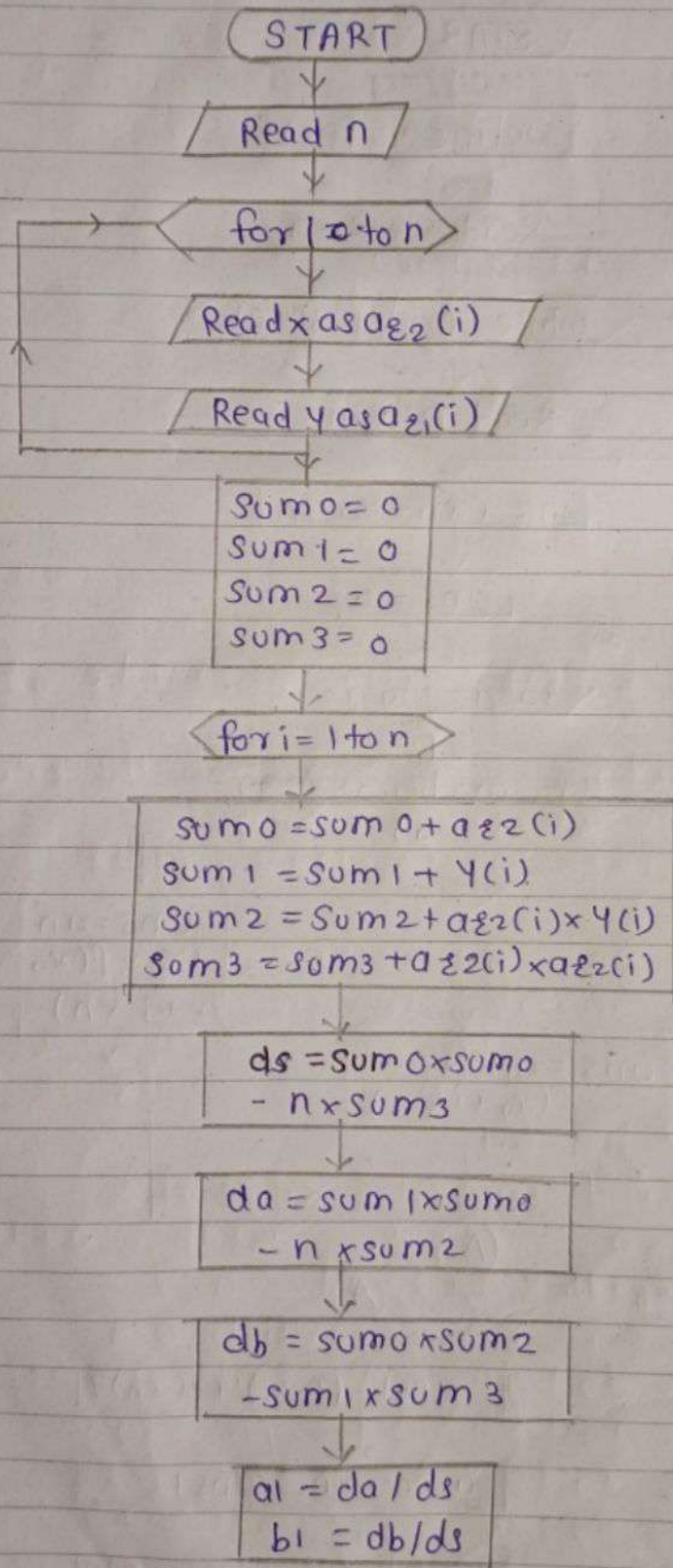
$$I = \int_0^{0.8} \log_e(x+1) + \sin(2x) \cdot dx = 0.23497$$

q.1)b) flow chart for Simpson's 3/8<sup>th</sup> rule:





Q.2) a) flow chart for eqn  $Y = ab^{2x}$



Q.2) b)  
forward

print a & b

$a = 10^{a_1}$   
 $b = 10^{b_1}$

print  $y = a^b$

END.

Q.2) b) following is the table of square roots. calculate the values of  $\sqrt{151}$  &  $\sqrt{155}$  by Newton's interpolation formula:

Forward

$x$	$x_0 = 150$	$x_1 = 152$	$x_2 = 154$	$x_3 = 156$
$y = \sqrt{x}$	12.247	12.329	12.410	12.490

$x$	$y$	$\Delta y$	$\Delta^2 y$	$\Delta^3 y$
150	12.247	0.082	0.001	
152	12.329	0.081	0.001	
154	12.410	0.080		
156	12.490			

1) calculate step size  $h$

$$h = x_1 - x_0 = 152 - 150 = 2$$

2) calculate value of  $u$

$$u = \frac{x - x_0}{h} = \frac{151 - 150}{2} = 0.5$$

3) Prepare Table

4) Apply Newton's Forward difference formula

$$y_g = y_0 + u \Delta y_0 + \frac{u(u-1)}{2!} \Delta^2 y_0$$

$$\therefore y_g = 12.288$$



For  $y = 155$

$$x_y = 155$$

$$\therefore y = \frac{155 - 156}{2} = -0.5$$

$$\therefore y = -0.5$$

$$y_{155} = 12.450$$

Q-3) a) find the coefficient of correlation from the data given below:

$x$	62	64	65	69	70	71	72	74
$y$	126	125	139	145	165	152	180	208

$$x = x - 69, \quad y = y - 152, \quad n = 8$$

$x$	$y$	$x = x - 69$	$y = y - 152$	$x^2$	$y^2$	$xy$
62	126	-7	-26	49	676	182
64	125	-5	-27	25	729	135
65	139	-4	-13	16	169	52
69	145	0	-7	0	49	0
70	165	1	13	1	169	13
71	152	2	0	4	0	0
72	180	3	28	9	784	84
74	208	5	56	25	3136	280
$\Sigma$		-5	24	129	5712	746

$$\bar{x} = \frac{\Sigma x}{n} = -\frac{5}{8}$$

$$\bar{x} = 69 - \frac{5}{8} = 68.375$$

$$\bar{y} = 152 + \bar{y}$$

$$= 152 + \frac{\Sigma y}{n} = 152 + \frac{24}{8}$$

$$\bar{y} = 155$$

$$\sigma_x^2 = \sigma_x^2$$

$$\sigma_x^2 = \frac{\Sigma x^2}{n} - \bar{x}^2 = \frac{129}{8} - \left(\frac{25}{64}\right) = \frac{1007}{64}$$

$$\sigma_x = 3.97$$

$$\sigma_y^2 = \frac{\Sigma y^2}{n} - \bar{y}^2 = \frac{5712}{8} - 9^2 = 705$$

$$\sigma_y = 26.56$$

$$r = \frac{\text{cov}(x, y)}{\sigma_x \cdot \sigma_y} = \frac{95.125}{3.97 \times 26.56} = 0.9$$

The line of regression of  $y$  on  $x$  is

$$y - \bar{y} = r \frac{\sigma_y}{\sigma_x} (x - \bar{x})$$



$$y - 155 = 0.9 \times \frac{26.56}{3.97} (x - 68.38)$$

$$y = 6x - 256.73$$

The line of regression  $x$  on  $y$  is

$$x - \bar{x} = -\frac{6x}{6y} (y - \bar{y})$$

$$x - 68.38 = 0.9 \times \frac{3.97}{26.56} (y - 155)$$

$$20x = 34 + 950$$

$$y = 130$$

$$20x = 3(130) + 950$$

$$x = 67$$

Q. 3) b) Calculate mode for the following distribution.

Cross profit as % sales	0-7	7-14	14-21	21-28	28-35	35-42	42-49
No. of computers	19	25	36	72	51	43	28

modal class is 21-38

$$l = 21, h = 7, f_1 = 72, f_0 = 36, f_2 = 51$$

$$\text{Mode} = 21 + \frac{(72 - 36)}{(2 \times 72 - 36 - 51)} \times 7$$

$$\text{Mode} = 25.42$$

Q.4) Consider that there are three identical A, B & C. The bag A contains 2 gold coins, bag B contains 2 silver coins & bag C contains 1 silver & 1 gold coin. What is probability that if the coin is gold it is taken from bag 'A'?

$$P(A) = P(B) = \frac{1}{2}$$

$$A \rightarrow 2G, 3S$$

$$B \rightarrow 3G, 3S \quad P(G|A) = \frac{2}{5}$$

$$P\left(\frac{G}{B}\right) = \frac{1}{2}$$

$$P(G) = \frac{1}{2} \cdot \frac{2}{5} + \frac{1}{2} \cdot \frac{1}{2} = \frac{9}{20}$$

$$P(B|G) = \frac{P(B) \cdot P(G|B)}{P(G)}$$

$$= \frac{1/2 \cdot 1/2}{4/20}$$

$$= \frac{5}{9}$$

s.tribu

42	42
	49
	28

= 5/9



Q.4) Consider the mapping  $F: \mathbb{R}^2 \rightarrow \mathbb{R}^2$  defined by  $f(x, y) = (3y, 2x)$ . Let  $S$  be unit circle in  $\mathbb{R}^2$  that is the sol<sup>n</sup> set of  $x^2 + y^2 = 1$ , i) Describe  $F(S)$ , ii) find  $F^{-1}(S)$

→ 1) let  $(a, b)$  be an element of  $F(S)$ . Then there exists  $(x, y) \in S$ , such that

$$f(x, y) = (a, b)$$

$$\therefore (3y, 2x) = (a, b)$$

$$\therefore 3y = a, \quad 2x = b$$

$$x = \frac{b}{2}, \quad y = \frac{a}{3}$$

$$\therefore (x, y) \in S, \quad \text{i.e. } x^2 + y^2 = 1$$

$$\therefore \left(\frac{b}{2}\right)^2 + \left(\frac{a}{3}\right)^2 = 1$$

$$\therefore \frac{a^2}{9} + \frac{b^2}{4} = 1$$

$\therefore F(S)$  is an ellipse.

2) let  $F(x, y) = (a, b)$  where  $(a, b) \in S$

$$\therefore (3y, 2x) = (a, b)$$

$$\therefore 3y = a, \quad 2x = b$$

$$(a, b) \in S$$

$$a^2 + b^2 = 1$$

$$(3y)^2 + (2x)^2 = 1$$

$\therefore F^{-1}(S)$  is ellipse  $4x^2 + 9y^2 = 1$





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Exam Seat No. / Roll No. :- TME210052

Center Code :- 4071

Exam Seat No. in Words :- TME Two One D zero Five Two

Day / Date :- 7/11/2022

Exam :- PRELIM EXAM-I

Subject :- NSM

Medium :- English

Section :-

Sign. &amp; Date of Invigilator :-

Main Answer Sheet + Supplement = 1 +  = 

Q. 1	Q. 2	Q. 3	Q. 4	Q. 5	Q. 6	Q. 7	Q. 8	Total
15	15	12	12					54
15	15	15	15					60

Q.1) Evaluate  $\int_0^{0.8} (\log_e(x+1) + \sin(2x)) \cdot dx$

where  $x$  is in radius. Using Simpson's 1/3rd rule, divide the entire interval in 8 strips.

$$\Rightarrow y = f(x) = \log_e(x+1) + \sin(2x)$$

$$x_0 = 0, \quad x_n = 0.8, \quad n = 8$$

St-1) calculate step size  $h$ .

$$h = \frac{x_n - x_0}{n} = \frac{0.8 - 0}{8}$$

$$h = 0.1$$

St-2) Find successive values of  $x$ .

$$x_0 = 0, \quad x_1 = x_0 + 1h = 0 + 1 \times 0.1 = 0.1$$

$$x_2 = x_0 + 2h = 0 + 2 \times 0.1 = 0.2$$

$$x_3 = x_0 + 3h = 0 + 3 \times 0.1 = 0.3$$

$$x_4 = x_0 + 4h = 0 + 4 \times 0.1 = 0.4$$

$$x_5 = x_0 + 5h = 0 + 5 \times 0.1 = 0.5$$



$$x_6 = x_0 + 6h = 0 + 6 \times 0.1 = 0.6$$

$$x_7 = x_0 + 7h = 0 + 7 \times 0.1 = 0.7$$

$$x_8 = x_n = x_0 + 8h = 0 + 8 \times 0.1 = 0.8$$

Step 3: Find corresponding values of  $y$ .

$$y = f(x) = \log_e(x+1) + \sin(2x)$$

$$1) y_0 = f(x_0) = f(0)$$

$$y_0 = \log_e(x_0+1) + \sin(2x_0)$$

$$y_0 = \log_e(0+1) + \sin(2 \times 0)$$

$$2) y_1 = f(x_1) = f(0.1) = \log_e(x_1+1) + \sin(2x_1)$$

$$y_1 = \log_e(0.1+1) + \sin(2 \times 0.1) = 0.2400$$

$$3) y_2 = f(x_2) = f(0.2) = \log_e(0.2+1) + \sin(2 \times 0.2)$$

$$y_2 = 0.4685$$

$$4) y_3 = f(x_3) = f(0.3) = \log_e(0.3+1) + \sin(2 \times 0.3)$$

$$y_3 = 0.6785$$

$$5) y_4 = f(x_4) = f(0.4) = \log_e(0.4+1) + \sin(2 \times 0.4)$$

$$y_4 = 0.8634$$

$$6) y_5 = f(x_5) = f(0.5) = \log_e(0.6+1) + \sin(2 \times 0.5)$$

$$y_5 = 1.1361$$

$$7) y_7 = f(x_7) = f(0.7) = \log_e(0.7+1) + \sin(2 \times 0.7)$$

$$y_7 = 1.2158$$

$$8) y_8 = f(x_8) = f(0.8) = \log_e(0.8+1) + \sin(2 \times 0.8)$$

$$y_8 = 1.2548$$

Step 4: According to Simpson's  $1/3$  rule area  $A$  is given by.

$$A = A_1 + A_2 + A_3 + \dots + A_n \text{ or}$$

$$A = \frac{h}{3} [(y_0 + y_n) + 4(y_1 + y_3 + y_5 + \dots + y_{n-1})]$$

$$+ 2 \cdot (y_2 + y_4 + y_6 + \dots + y_{n-2}))$$

$$= \frac{0.1}{3} [(0 + 1.2548) + 4(0.2400 + 0.6785 +$$

$$+ 1.0175 + 1.2158) + 2(0.4685$$

$$+ 0.8634 + 1.1361)]$$

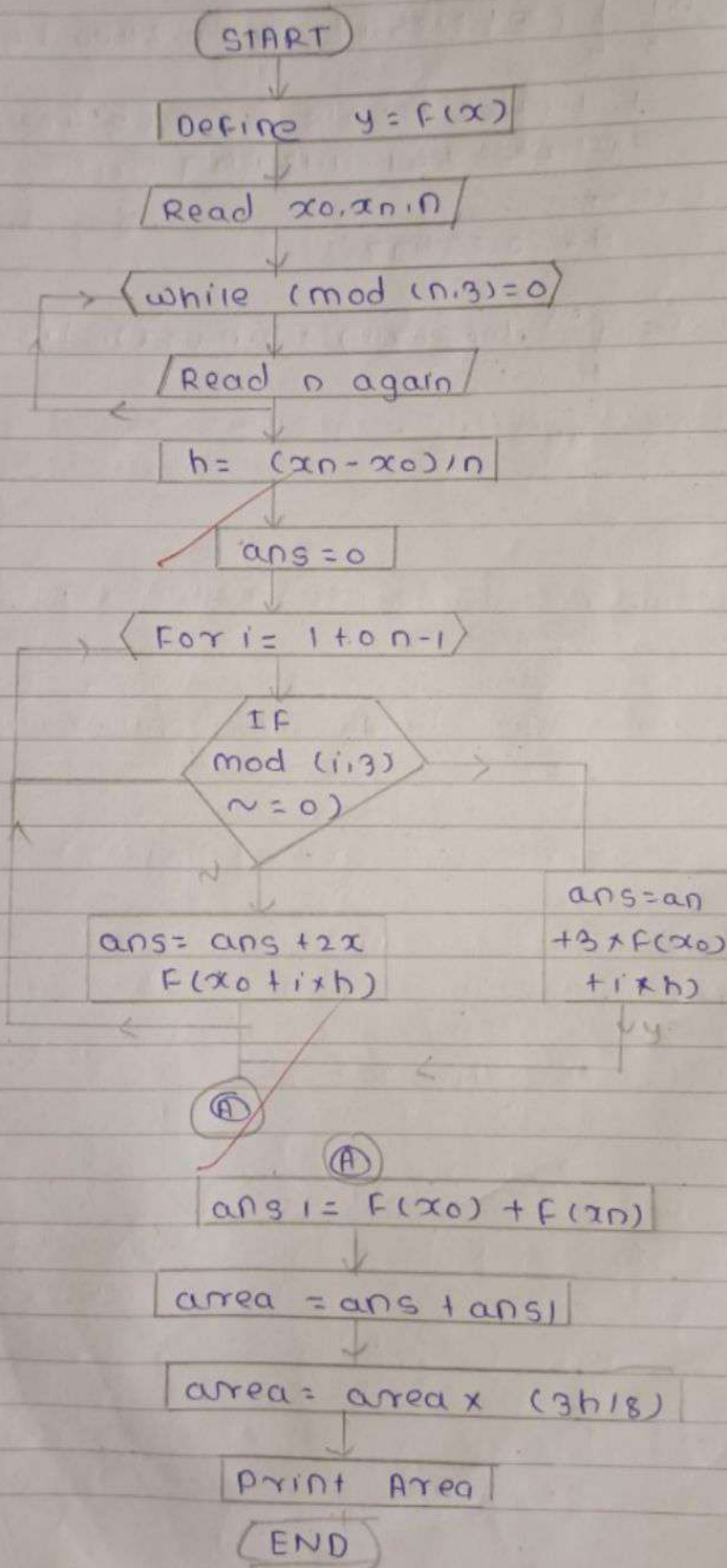
$$A = 0.23497$$

10

$$I = \int_0^{0.9} \log_e(x+1) + \sin(2x) \cdot dx = 0.23497$$



Q.1) b) Flow chart of Simpson's 3/8<sup>th</sup>

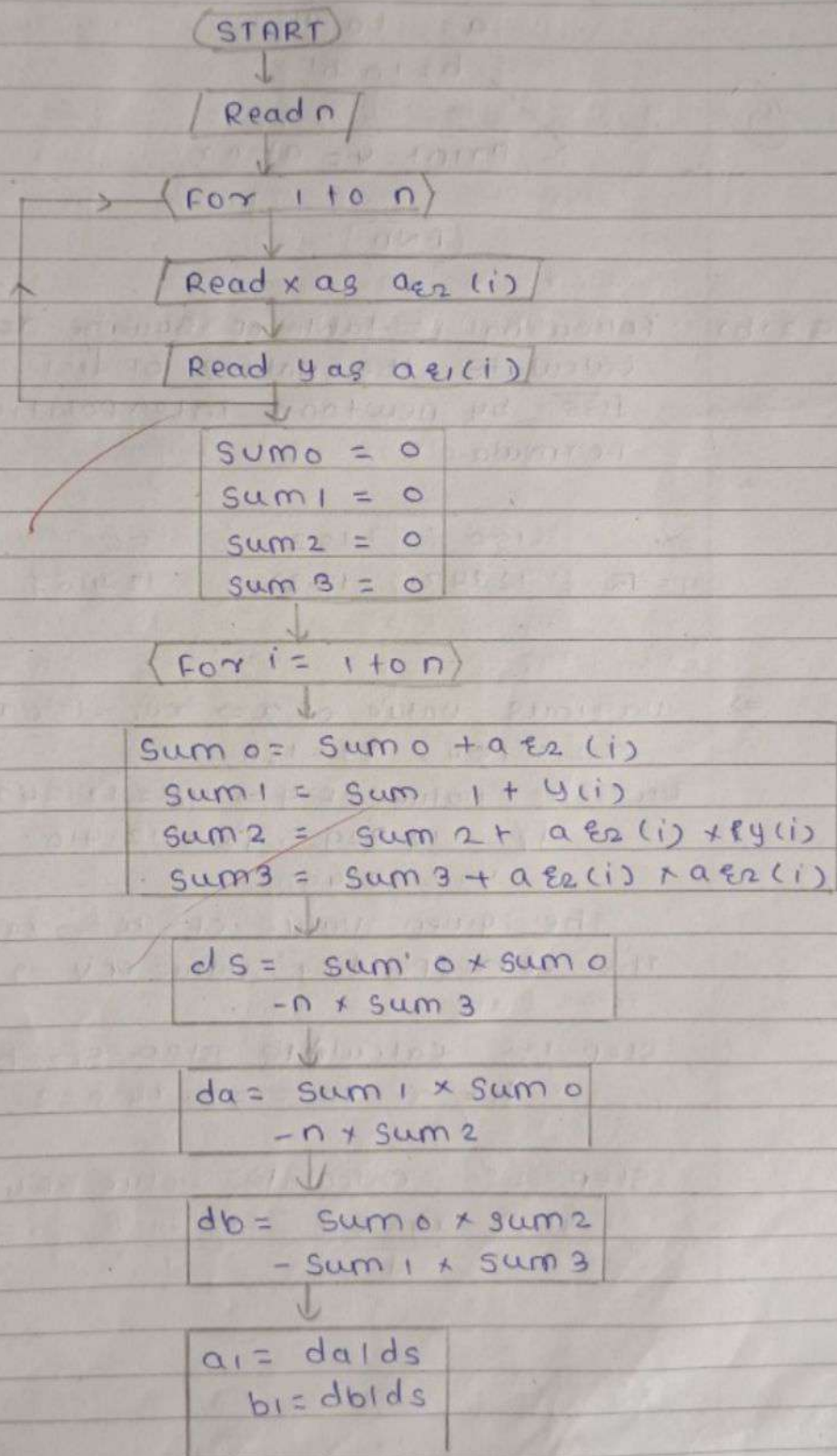


5

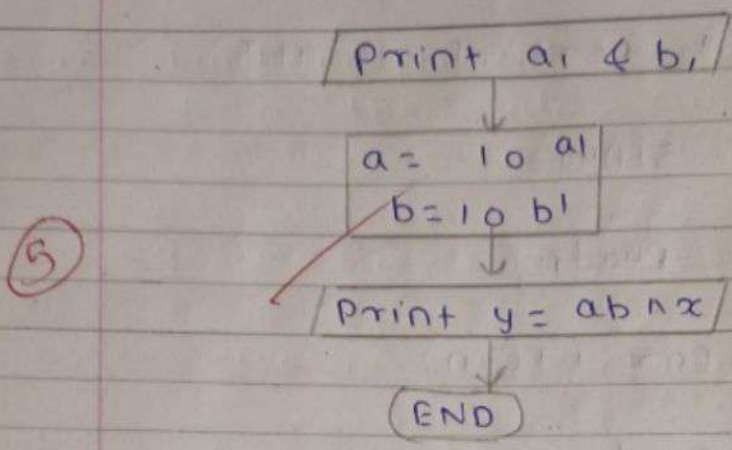
A

A

Q2)a) Flow chart for eqn  $y = ab^x$







Q.2) b) Following is table of square roots. calculate the values of  $\sqrt{151}$  &  $\sqrt{155}$  by newton's interpolation formula.

x	150	152	154	156
y = $\sqrt{x}$	12.247	12.329	12.410	12.490

=> Various value of x =>  $x_0 = 150, x_1 = 152, x_2 = 154, x_3 = 156$   
 Various value of y =>  $y_0 = 12.247, y_1 = 12.329, y_2 = 12.410, y_3 = 12.490$

The given value of x =>  $x_g = 151$   
 The corresponding value of y =>  $y_g = ?$

Step 1: calculate step size h  
 $\therefore h = x_1 - x_0 = 152 - 150 = 2$

Step 2: calculate value of u  
 $u = \frac{x_g - x_0}{h} = \frac{151 - 150}{2} = 0.5$

Step 3: Prepare the forward difference table. Forward difference table is given below.

$x$	$y$	$\Delta y$	$\Delta^2 y$	$\Delta^3 y$
150	12.247	0.082	-0.001	0
152	12.329	0.081	-0.001	
154	12.410	0.080		
156	12.490			

Step 4: Apply Newton's forward difference formula,

$$y_g = y_0 + u \Delta y_0 + \frac{u(u-1)}{2!} \Delta^2 y_0$$

$$y_g = 12.247 + 0.5(0.082) + \frac{0.5(0.5-1)}{2}(-0.001)$$

$$y_g = 12.288$$

$$\text{for } y = (155)$$

Similarly for  $x_g = 155$

$$\therefore u = \frac{155 - 156}{2} = -0.5 \therefore u = -0.5$$

$$y_{155} = 12.450$$

(10)



Q.33a) Find coefficient of correlation from the data given below.

x	62	64	65	69	70	71	72	74
y	126	125	139	145	165	152	180	208

=> Step 1 or we change the scale.

Let  $x = x - 69$ ,  $y = y - 152$  to find  $r$ , we prepare the table.

Here,  $n = 8$

x	y	$x = x - 69$	$y = y - 152$	$x^2$	$y^2$	$xy$
62	126	-7	-26	49	676	182
64	125	-5	-27	25	729	135
65	139	-4	-13	16	169	52
69	145	0	-7	0	49	0
70	165	1	13	1	169	13
71	152	2	0	4	0	0
72	180	3	28	9	784	84
74	208	5	56	25	3136	280
$\Sigma$		-5	24	129	5712	746

$$\text{we have } \bar{x} = \frac{\Sigma x}{n} = -\frac{5}{8}$$

$$\therefore \bar{x} = 69 - \frac{5}{8} = 68.375$$

$$\text{and } \bar{y} = 152 + \frac{\Sigma y}{n} = 152 + \frac{24}{8} = 155$$

$$6x = 3.97$$

$$6y^2 = \frac{\Sigma y^2}{n} - \bar{y}^2 = \frac{5712}{8} - 9 = 705$$

$$6y = 26.56$$

$$r = \frac{\text{Cor}(x, y)}{6x \cdot 6y} = \frac{95.125}{3.97 \times 26.56} = 0.9$$

The line of regression of y on x is

$$y - \bar{y} = r \frac{6y}{6x} (x - \bar{x})$$

$$y - 155 = 0.9 \times \frac{26.56}{3.97} (x - 68.38)$$

$$y = 6x - 256.73$$

The line of regression x on y is

$$x - \bar{x} = r \frac{6x}{6y} (y - \bar{y})$$

$$x - 68.38 = 0.9 \times \frac{3.97}{26.56} (y - 155)$$

$$20x = 3y + 950$$

$$y = 130$$

$$20x = 3(130) + 950$$

$$x = 67$$

10



Q.3) b) calculate mode for the following distribution.

cross profit	0-7	7-14	14-21	21-28	28-35	35-42	42-49
as % of sales	14	25	36	72	51	43	28
No. of computers	19	25	36	72	51	43	28

=> modal class is 21-38

$$l = 21, h = 7, f_1 = 72, f_0 = 36, f_2 = 51$$

$$\text{mode} = 21 + \frac{(72 - 36)}{(2 \times 72 - 36 - 51)} \times 7$$

$$\text{Mode} = 25.42$$

Q.424) Consider that there are three identical bags A, B & C. The bag A contains 2 gold coins, bag B contains 2 silver coins & bag C contains 1 silver & 1 gold coin. What is the probability that if the coin is gold it is taken from bag 'A'?

$$\Rightarrow P(A) = P(B) = \frac{1}{3}$$

$$A \rightarrow 2G, 3S$$

$$B \rightarrow 3G, 3S \cdot P(G|A) = \frac{2}{5}$$

$$P\left(\frac{G}{B}\right) = \frac{1}{2}$$

$$P(G) = \frac{1}{3} \cdot \frac{2}{5} + \frac{1}{3} \cdot \frac{1}{2} = \frac{9}{30}$$

$$P(B|G) = \frac{P(B) \cdot P(G|B)}{P(G)}$$

$$= \frac{1/3 \cdot 1/2}{9/30}$$

$$= \frac{5}{9}$$

7



Q.4) consider the mapping  $F: \mathbb{R}^2 \rightarrow \mathbb{R}^2$  defined by  $F(x, y) = (3y, 2x)$ . Let  $S$  be unit circle in  $\mathbb{R}^2$  that is the sol<sup>n</sup> set of  $x^2 + y^2 = 1$ . i) Describe  $F(S)$ , ii) find  $F^{-1}(S)$ .

=> 1) Let  $(a, b)$  be an element of  $F(S)$ . Then there exists  $(x, y) \in S$ , such that,

$$\begin{aligned} F(x, y) &= (a, b) \\ \therefore (3y, 2x) &= (a, b) \\ \therefore 3y &= a, \quad 2x = b \end{aligned}$$

$$x = \frac{b}{2}, \quad y = \frac{a}{3}$$

$$\therefore (x, y) \in S, \text{ i.e. } ; x^2 + y^2 = 1$$

$$\therefore \left(\frac{b}{2}\right)^2 + \left(\frac{a}{3}\right)^2 = 1$$

$$\therefore \frac{a^2}{9} + \frac{b^2}{4} = 1$$

$\therefore F(S)$  is an ellipse

2) Let  $F(x, y) = (a, b)$  where  $(a, b) \in S$

$$\therefore (3y, 2x) = (a, b)$$

$$\therefore 3y = a, \quad 2x = b.$$

$$(a, b) \in S$$

$$a^2 + b^2 = 1$$

$$(3y)^2 + (2x)^2 = 1$$

$\therefore F^{-1}(S)$  is ellipse  $4x^2 + 9y^2 = 1$



Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**  
Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal - Bhor, Dist- Pune (Maharashtra)  
**RESULT ANALYSIS OF PRELIM EXAM**


Class: T.E. Mechanical  
Semester-I

Academic Year- 2022-23

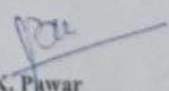
Sr. No	Roll No.	Name of Student	NSM	HMT	DME	MTX	MST	Total	% Marks
			60	60	60	60	60	300	100%
1	TME21F001	BARGE SUMIT DIPAK	36	35	26	36	28	161	54%
2	TME21F002	DESAI ADARSH DATTATRAY	30	36	36	56	24	182	61%
3	TME21F003	GURAV SUYOG YOGESH	24	56	56	30	28	194	65%
4	TME21F004	JADHAV NIKITA SANTOSH	28	30	24	20	24	126	42%
5	TME21F005	KINDRE SOHAM JAYWANT	24	20	28	28	26	126	42%
6	TME21F006	PAWAR AKSHAY ARUN	26	28	24	26	36	140	47%
7	TME21F007	PAWAR PRATIK SOMNATH	36	26	26	24	56	168	56%
8	TME21F008	PISAL SANIKA NARAYAN	56	24	36	22	30	168	56%
9	TME21F009	SHAIKH ADIL MUSTAQ	30	22	56	26	20	154	51%
10	TME21F010	TANPURE KUNAL CHANDRAKANT	20	22	30	24	20	116	39%
11	TME21F011	TANPURE TEJAS SANDIP	28	20	20	22	20	110	37%
12	TME21D012	AHIRE YUVRAJ SHRIRANG	26	20	20	22	38	126	42%
13	TME21D013	BABAR SANDESH JITENDRA	24	16	20	20	30	110	37%
14	TME21D014	BHALERAO PRAMODKUMAR PRABHAKAR	22	19	28	30	24	123	41%
15	TME21D015	BHANDARE VISHWAJEET RAJENDRA	22	30	38	AB	24	114	38%
16	TME21D016	BHILARE PRATIK GULAB	20	32	30	25	28	135	45%
17	TME21D017	DESHMUKH SAURABH RAJENDRA	30	22	24	36	26	138	46%
18	TME21D018	GADE ABHIJEET JITENDRA	AB	34	24	24	32	114	38%
19	TME21D019	JADHAV OMKAR POPAT	28	24	28	28	32	140	47%
20	TME21D020	JADHAV VEDANT RAJESH	38	26	26	24	32	146	49%
21	TME21D021	KAMTHE AJINKYA POPAT	30	24	32	26	32	144	48%
22	TME21D022	KHAIRE SAURABH RAMDAS	24	36	34	36	24	154	51%
23	TME21D023	KHANDEKAR MAHESH RAJARAM	24	22	36	56	28	166	55%
24	TME21D024	KHOPE ABHIJIT ASHOK	28	26	34	30	24	142	47%
25	TME21D025	KOKARE AJAY KAMALAKAR	26	36	20	36	26	144	48%
26	TME21D026	KOKARE ANKUSH SALU	32	56	20	56	36	200	67%
27	TME21D027	KULKARNI SANKET SUNIL	34	30	16	30	56	166	55%
28	TME21D028	KUMBHAR DEEP LAXMAN	36	20	19	20	30	125	42%
29	TME20D029	KUMBHAR MAHAVIR JALINDAR	34	28	30	28	20	140	47%
30	TME20D030	KUMBHAR VIKRAM BHANUDAS	30	26	32	26	20	134	45%
31	TME21D031	KURADE ABHIJEET BAPU	22	24	24	24	20	114	38%



32	TME20D032	MANDHARE ANIKET SANJAY	20	22	22	22	16	102	34%
33	TME21D033	MORE DHIRAJ DEVIDAS	24	24	22	30	19	119	40%
34	TME21D034	NEWASE PRATIK SAMBHAJI	18	24	20	24	30	116	39%
35	TME21D035	NEVASE SIDDHANT PARMESHWAR	AB	28	30	24	32	114	38%
36	TME21D036	NEVASE SIDDHESH SANJAY	AB	26	AB	28	22	76	25%
37	TME21D037	NIMBALKAR PRATIK RAMESH	24	24	36	26	20	130	43%
38	TME21D038	PILAWARE NILESH DILIP	22	28	56	32	20	158	53%
39	TME21D039	PIMPALE VISHAL SANJAY	20	24	30	36	16	126	42%
40	TME21D040	PISAL VIRAJ ASHOK	20	26	20	56	19	141	47%
41	TME21D041	POL TEJAS ASHOK	16	36	28	30	30	140	47%
42	TME21D042	PUJARI ASHISH HARISH	19	56	26	20	32	153	51%
43	TME21D043	RAJIGARE SWAPNIL DILIP	30	30	24	28	22	134	45%
44	TME21D044	RANAWARE ASHISH ARUN	32	20	22	26	34	134	45%
45	TME21D045	RAUT VISHAL VILAS	22	20	20	24	24	110	37%
46	TME21D046	SALUNKHE TANMAY RAMESH	34	16	20	22	26	118	39%
47	TME21D047	SANGALE OMKAR DATTATRAY	24	19	16	24	24	107	36%
48	TME21D048	SAWANT DURVESH RAJESH	26	30	19	22	36	133	44%
49	TME21D049	SHINDE PURSHOTTAM MANSING	24	32	30	22	22	130	43%
50	TME21D050	SHINDE SHREYASH ANIL	36	32	32	20	30	150	50%
51	TME21D051	SONKAMBLE NIRAJ PIRAPPA	22	20	22	30	28	122	41%
52	TME21D052	SURYAWANSHI AJAY BHAUSAHEB	54	17	34	AB	32	137	46%
53	TME21D053	TALEKAR SAURABH SAHADEV	22	25	24	28	20	119	40%
54	TME21D054	TALWAR RAHUL ANANDRAO	AB	22	26	38	17	103	34%
55	TME21D055	YADAV PRATHMESH HEMANT	30	27	24	30	25	136	45%
56	TME20D056	PAPAL GANESH SANTOSH	28	20	36	24	22	130	43%
57	TME20D057	PATEL VIKAS RAMAKANT	32	20	22	24	27	125	42%
58	TME20D058	WAGHMARE PRIYANKA PHULCHAND	20	16	28	28	20	112	37%
59	TME20D059	AMRUTE ANKUSH SITARAM	17	19	26	26	20	108	36%
60	TME21F060	RANJANE NIKHIL LAXMAN	25	30	32	32	16	135	45%
61	TME20D061	RAUT SHUBHAM ROHIDAS	22	32	25	34	19	132	44%
62	TME20D062	KHAIRE MANDAR SATISH	27	32	22	36	30	147	49%
Staff Sign									

  
Prof. A. T. Jadhav  
Class Coordinator



  
Prof. S. K. Pawar  
HOD  
Head of Department  
Dept. of Mechanical Engineering  
Shri Chh. Shivajiraje College of Engg.  
Dhangaewadi, Pune-412206

# MOCK TEST





RajgadDnyanpeeth's

**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**

S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -412205 (MS), India

Ref.no./RD/SCSCOE/CIVIL/EXAM/2022-23

Date: 13/05/2023

**NOTICE**

**Sub:**Conduction of Mock practical/ oral/seminar/project &  
Dissertation examination.

All staff of civil engineering department is hereby informed that, Mock OR/PR/PROJECT examination May/June-2023 (held in May- 2023). SE, TE, BE Engineering Examination schedule from 16<sup>th</sup> to 20<sup>th</sup> May 2023

Examinations shall be conducted through offline mode, there is no lecture schedule for Mock OR/PR/PROJECT exam.

Prof. G.S. Yadav  
Dept. Exam Co-ordinator



Prof. S.P. Salunkhe  
Head of Dept. of Civil Engg.

**Head of Department**  
Dept. of Civil Engineering  
Shri Chhatrapati Shivajiraje College of Engineering  
Dhangawadi, Satara-Pune-412205



RajgadDnyanpeeth's

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Ref.no./RD/SCSCOE/CIVIL/EXAM/2022-23

13/05/2023

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Examinations shall be conducted through offline mode only. Submission checked by respected subject teacher is compulsory before exam date for OR/PR/PROJECT exam, without submission no one is allowed for OR/PR/PROJECT exam.

Please refer below Time table

**Tentative Schedule of Mock OR/PR/Project May/June 2023**

Sr. No	Class & Pattern	Name of Subject	Name of Internal Faculty	Date of Exam	Exam Type (Marks)
1	SE 2019 PATT. SEM-I	Geotechnical Engineering	Prof.S.K.Bhosale	16/05/2023	OR(50)
2		Survey	Prof.S.S.Jadhav	17/05/2023	PR(50)
3	TE 2019 PATT. SEM-I	Waste Water Engineering	Prof.P.G.Gaikwad	18/05/2023	OR(50)
4		Design of RC Structures	Prof.P.J.Gaikwad	19/05/2023	OR(50)
5	BE 2019 PATT. SEM-I	Dams and Hydraulics Structures	Prof.S.P.Salunkhe	18/05/2023	OR(50)
6		Quantity Surveying, Contracts and Tenders	Prof.P.G.Gaikwad	19/05/2023	OR(50)
7		Project Stage II	Prof.S.P.Salunkhe	20/05/2023	OR(50)

Prof.G.S.Yadav

Dept. Exam Coordinator



Prof.S.P.Salunkhe

Head Of Civil Department

Head of Department

Dept. of Civil Engineering

Shri Chh. Shivajiraje College of Engg

Dhangawadi, Pune - 412206



Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**  
 Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal – Bhor, Dist- Pune (Maharashtra)

**Department of Civil Engineering**

Examination - Mock OR/PR /Project Examination

**Result Analysis**

Class: T.E.		A.Y. 2022-23 (Sem -I)		Out of -50	
Roll No.	Name of Student	WSE (PR)	DSS(OR)		
TCI21D001	ACHALERE BABURAO SHIVANAND	26	28		
TCI21D002	BABAR RAJAT RAVINDRA	24	35		
TCI21D003	BANSODE RUSHIKESH SHANKAR	20	14		
TCI21D004	BARKADE KISHOR UTTAM	22	14		
TCI21D005	BHAREKAR MANAVI MANOHAR	38	40		
TCI21D006	BHOITE ABHIJEET KANCHAN	AB	14		
TCI21D007	BHOKARE HARSHAL PRAKASH	18	AB		
TCI21D008	BODARE KAUSHTUB MOHAN	AB	AB		
TCI21D009	CHAREGAONKAR PRATIK SHAILENDRA	AB	AB		
TCI21D010	CHAWAN UMESH SHANKAR	26	30		
TCI21D011	DEVRASE GANESH SANTOSH	32	32		
TCI21D012	GAUD MAMTA SATYANARAYAN	AB	20		
TCI21D013	GHADGE OM SANJAY	AB	AB		
TCI21D014	GHONE PRITAM ROHIDAS	AB	19		
TCI21D015	JADHAV ANIL NAGANATH	18	AB		
TCI21D016	JADHAV TEJAS NARESH	25	25		
TCI21D017	JADHAV TEJAS RAMESH	20	22		
TCI20F018	JAGTAP VIVEK SANJEEV	24	32		
TCI21D019	JORI ADITYA RAM	AB	18		
TCI21D020	KADAM VAIBHAV VIKAS	25	AB		
TCI21D021	KAMBALE VAIBHAV TATYASAHEB	24	26		
TCI21D022	KANEKAR AADIL ABDUL WAHAB	26	23		
TCI21D023	KARME KARTIK BHIMRAO	26	27		
TCI21D024	KASAR AKASH MADAN	AB	18		
TCI21D025	KENDRE SAINATH TATERAO	38	42		
TCI21D026	KESARKAR ROHINI RAVINDRA	18	25		
TCI21D027	LAGAD RAJKUMAR GAJANAN	22	18		
TCI21D028	LAMBE DURGESH VISHNU	32	28		
TCI21D029	MADAM POOJA SATISH	AB	16		
TCI21D030	MANDHARE GANESH SANJAY	16	AB		
TCI21D031	MANE AKANKSHA ANANT	18	24		
TCI21D032	MANE SURAJ ARJUN	26	18		
TCI21D033	MATALE RUSHIKESH KALURAM	AB	AB		
TCI21D034	MORE APURVA SHRIKANT	40	38		
TCI21D035	MORE SUNANDA SHRIKANT	AB	AB		

TCI21D036	<u>OLEKAR PRAKASH DNYANESHWAR</u>	20	AB
TCI20F037	PANGARE MEGHA RAJENDRA	28	26
TCI21D038	PAWAR AVINASH SANTOSH	AB	27
TCI21D039	<u>PAWAR DHAMMADIP LAXMAN</u>	18	26
TCI21D040	<u>PAWAR MAKARAND SANJAY</u>	AB	AB
TCI21D041	<u>PAWAR PRATHAMESH RAJENDRA</u>	28	20
TCI21D042	<u>PAWAR VAIBHAV DILIP</u>	32	28
TCI21D043	<u>PINPRATIWAR AKASH BABRUWAN</u>	27	24
TCI20F044	PISAL SANIKA ARUN	34	27
TCI21D045	<u>POWAR PRATIBHA SAGAR</u>	32	40
TCI20F046	RAJIWADE KETAN NARAYAN	24	24
TCI21D047	<u>RANJANE SANDHYA SANJAY</u>	40	38
TCI21D048	<u>RELEKAR ADITYA ARUN</u>	28	AB
TCI21D049	<u>SABLE VIJAYA ROHIDAS</u>	40	40
TCI21D050	<u>SALUNKHE SHRIKANT POPATBHAI</u>	AB	AB
TCI21D051	<u>SHINDE ANIKET VITTHAL</u>	32	16
TCI21D052	<u>SURWASE TEJAS TATYASAHEB</u>	24	AB
TCI21D053	<u>THORAVE SONALI MAHADEV</u>	26	30
TCI21D054	<u>TUPE ADITYA NAVNATH</u>	28	28
TCI20F055	TUPE SANDESH ASHOK	28	26
TCI21D056	<u>YADAV PRAJWAL SANTOSH</u>	26	31

Name of Subject:	WSE	DSS
Total No. of Students :	56	56
Total No. of Students Present :	42	42
Total No. of Students Absent :	14	14
Total No. of Students Passed :	36	33
Total No. of Students Failed :	6	9
Result in Percentage	£64.29	£58.93
Staff Initials	GSY	RCD



Prof.G.S.Yadav

Department Exam Coordinator



Head

Department of Civil Engineering



**Head of Department**  
 Dept. of Civil Engineering  
 Shri Chh. Shivajiraje College of Engg  
 Dhule - 431206





RajgadDnyanpeeth's

**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**

S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -412205 (MS), India

Ref.no./RD/SCSCOE/CIVIL/EXAM/2022-23

Date: 13/11/2022

**NOTICE**

**Sub:** Conduction of Mock practical/ oral/seminar/project & Dissertation examination.

All staff of civil engineering department is hereby informed that, Mock OR/PR/SEMINAR/PROJECT examination Nov/Dec-2022 (held in Nov- 2022). SE, TE, BE Engineering Examination schedule from 15<sup>th</sup> to 19<sup>th</sup> Nov 2022

Examinations shall be conducted through offline mode, there is no lecture schedule for Mock OR/PR/SEMINAR/PROJECT exam.

**Prof. G.S. Yadav**  
Dept. Exam Co-ordinator



**Prof. S.P. Salunkhe**  
Head Dept. of Civil Engg.

Head of Department  
Dept. of Civil Engineering  
Shri Chhatrapati Shivajiraje College of Engineering  
Dhangawadi, Pune - 412205



RajgadDnyanpeeth's

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Ref.no./RD/SCSCOE/CIVIL/EXAM/2022-23

13/11/2022

**NOTICE**

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Examinations shall be conducted through offline mode only. Submission checked by respected subject teacher is compulsory before exam date for OR/PR/PROJECT exam, without submission no one is allowed for OR/PR/PROJECT exam.

Please refer below Time table for subject allotment for respective class & dates of examination.

**Tentative Schedule of Mock OR/PR/Project NOV/DEC 2022**

Sr. No	Class & Pattern	Name of Subject	Name of Internal Faculty	Date of Exam	Exam Type (Marks)
1	SE 2019 PATT.	Mechanics of structure	Prof.P.G.Gaikwad	15/11/2022	OR(50)
2	SEM-I	Fluid Mechanics	Prof.S.K.Bhosale	16/11/2022	OR(50)
3	TE 2019 PATT.	DSS	Prof.P.J.Gaikwad	15/11/2022	OR(50)
4	SEM-I	WSE	Prof.G.S.Yadav	17/11/2022	PR(50)
5	BE 2019 PATT.	TRE	Prof.K.R.Juare	16/11/2022	OR(50)
6	SEM-I	Elective III (IWRPM)	Prof.S.K.Bhosale	17/11/2022	OR(50)
7		Project Stage I	Prof.S.P.Salunkhe	18/11/2022	OR(50)

Prof. G. S. Yadav

Dept. Exam Coordinator



Prof. S.P. Salunkhe

Head Of Civil Department

Head of Department

Dept. of Civil Engineering  
Shri Chh. Shivajiraje Collg.  
Dhangawadi, Pune - 412205



Rajgad Dnyanpeeth's

SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING

Gat No. 237, Pune Bangalore Highway, Dhangawadi, Tal - Bhor, Dist- Pune (Maharashtra)

Department of Civil Engineering

Examination - Mock OR/PR /Project Examination

Result Analysis

Class: T.E.		A.Y. 2022-23 (Sem -II)		Out of -50	
Roll No.	Name of Student	WWE(OR)	DRS(OR)		
TCI21D001	ACHALERE BABURAO SHIVANAND	30	30		
TCI21D002	BABAR RAJAT RAVINDRA	32	32		
TCI21D003	BANSODE RUSHIKESH SHANKAR	21	20		
TCI21D004	BARKADE KISHOR UTTAM	24	14		
TCI21D005	BHAREKAR MANAVI MANOHAR	42	40		
TCI21D006	BHOITE ABHIJEET KANCHAN	18	14		
TCI21D007	BHOKARE HARSHAL PRAKASH	25	AB		
TCI21D008	BODARE KAUSHTUB MOHAN	24	AB		
TCI21D009	CHAREGAONKAR PRATIK SHAIENDRA	AB	AB		
TCI21D010	CHAWAN UMESH SHANKAR	26	30		
TCI21D011	DEVRASE GANESH SANTOSH	32	32		
TCI21D012	GAUD MAMTA SATYANARAYAN	AB	20		
TCI21D013	GHADGE OM SANJAY	AB	AB		
TCI21D014	GHONE PRITAM ROHIDAS	AB	19		
TCI21D015	JADHAV ANIL NAGANATH	18	AB		
TCI21D016	JADHAV TEJAS NARESH	25	26		
TCI21D017	JADHAV TEJAS RAMESH	24	23		
TCI20F018	JAGTAP VIVEK SANJEEV	28	27		
TCI21D019	JORI ADITYA RAM	18	18		
TCI21D020	KADAM VAIBHAV VIKAS	25	AB		
TCI21D021	KAMBALE VAIBHAV TATYASAHEB	24	26		
TCI21D022	KANEKAR AADIL ABDUL WAHAB	31	25		
TCI21D023	KARME KARTIK BHIMRAO	26	27		
TCI21D024	KASAR AKASH MADAN	AB	18		
TCI21D025	KENDRE SAINATH TATERAO	40	42		
TCI21D026	KESARKAR ROHINI RAVINDRA	26	25		
TCI21D027	LAGAD RAJKUMAR GAJANAN	22	18		
TCI21D028	LAMBE DURGESH VISHNU	32	28		
TCI21D029	MADAM POOJA SATISH	AB	16		
TCI21D030	MANDHARE GANESH SANJAY	30	AB		
TCI21D031	MANE AKANKSHA ANANT	32	24		
TCI21D032	MANE SURAJ ARJUN	26	18		
TCI21D033	MATALE RUSHIKESH KALURAM	AB	AB		
TCI21D034	MORE APURVA SHRIKANT	40	38		
TCI21D035	MORE SUNANDA SHRIKANT	23	AB		

TCI21D036	<u>OLEKAR PRAKASH DNYANESHWAR</u>	24	AB
TCI20F037	PANGARE MEGHA RAJENDRA	28	26
TCI21D038	PAWAR AVINASH SANTOSH	AB	27
TCI21D039	<u>PAWAR DHAMMADIP LAXMAN</u>	28	26
TCI21D040	<u>PAWAR MAKARAND SANJAY</u>	AB	AB
TCI21D041	<u>PAWAR PRATHAMESH RAJENDRA</u>	28	20
TCI21D042	<u>PAWAR VAIBHAV DILIP</u>	32	28
TCI21D043	<u>PINPRATIWAR AKASH BABRUWAN</u>	27	24
TCI20F044	PISAL SANIKA ARUN	28	27
TCI21D045	<u>POWAR PRATIBHA SAGAR</u>	38	40
TCI20F046	RAJIWADE KETAN NARAYAN	24	24
TCI21D047	<u>RANJANE SANDHYA SANJAY</u>	40	38
TCI21D048	<u>RELEKAR ADITYA ARUN</u>	28	AB
TCI21D049	<u>SABLE VIJAYA ROHIDAS</u>	44	40
TCI21D050	<u>SALUNKHE SHRIKANT POPATBHAI</u>	AB	AB
TCI21D051	<u>SHINDE ANIKET VITTHAL</u>	32	16
TCI21D052	<u>SURWASE TEJAS TATYASAHEB</u>	28	AB
TCI21D053	<u>THORAVE SONALI MAHADEV</u>	26	30
TCI21D054	<u>TUPE ADITYA NAVNATH</u>	31	28
TCI20F055	TUPE SANDESH ASHOK	32	26
TCI21D056	<u>YADAV PRAJWAL SANTOSH</u>	17	31

Name of Subject:	<b>WWE</b>	<b>DRS</b>
Total No. of Students :	56	56
Total No. of Students Present :	46	42
Total No. of Students Absent :	10	14
Total No. of Students Passed :	41	33
Total No. of Students Failed :	5	9
<b>Result in Percentage</b>	<b>£73.21</b>	<b>£58.93</b>
<b>Staff Initials</b>	<b>PGG</b>	<b>PJG</b>

*G.S. Yadav*

Prof.G.S.Yadav

Department Exam Coordinator

*[Signature]*

Head

Department of Civil Engineering



**Head of Department**

Dept. of Civil Engineering

Shri Chhatrapati Shivrajrao College of Engg.

Dhule - 431 006



# PROJECT REVIEW



Rajgad Dnyanpeeth's

**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**

S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -412205 (MS), India.

Website: [www.rajgad.edu.in](http://www.rajgad.edu.in), Email Id: [scscoe@gmail.com](mailto:scscoe@gmail.com)

Ref. RDTC/SCSCOE/Invitation/2022-23

Date: 29/07/2022

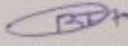
## NOTICE

All the B.E students are hereby informed to submit their project group details along with project domains to project coordinator on or before 8/8/2022. There should be minimum three or maximum four members in project groups.

● Possible Domains for the Projects Are

1. Machine Learning
2. IOT
3. Cyber Security
4. Artificial Intelligence
5. Cloud Computing
6. Data Mining



  
Prof. B. D. Thorat  
HOD  
( Computer Engg. Dept.)





Rajgad Dnyanpeeth's

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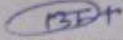
Ref. RDTC/SCSCOE/Invitation/2022-23

Date: 10/8/2022

## Project Guide Allotment (For Guide)

### NOTICE

All the guides are hereby informed that, contact your respective students and guide them according to time slot mentioned in time table as well as whenever required. Make them to maintain project log book regularly. Two page synopsis of final project statement should be submitted to project coordinator.

  
Prof. B. D. Thorat  
HOD  
( Computer Engg. Dept.)





Rajgad Dnyanpeeth's  
CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING  
S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal: Bhor, Dist: Pune -

Department of Computer Engineering

Class BE

A.Y 2022-23

List of BE Project Groups with Allocated Guide

Group No	Student Name	Project Domain	Project guide name	Project Title
G1	Bobade Prachi Santosh	Machine Learning	Prof. B. D. Thorat	Sales forecasting using ML
	Garud Akshada Anil			
	Chavan Ritambara Shankar			
	Gorad Akshada Rajendra			
G2	More Priti Arvind	Machine Learning	Prof. S. B. Shirke	Multi-image steganography
	Shilenkar Namrata Rajendra			
	Dighe Supriya Dattatraya			
G3	Thombare chandan shekhar	Machine Learning	Prof. K. S. Khamkar	AI search engine for clutter free web research
	Jagtap Gauravi Sopan			
	Kanade Omkar Rajesh			
	Pawar Snehal Sunil			
G4	Kahirsagar Akash Mahesh	Cyber security	Prof. S. B. Shirke	Stock market price prediction
	Mandhare Rupali Laxman			
	Pophale Kishori Vijay			
	Jadhav Shweta Yashwant			
G5	Wadakar Mohini Sanjay	Machine Learning	Prof. B. R. Bhatti	Govt. fraud allocation and tracking
	Walhekar Abhinav Navnath			
	Jadhav Harshad Arjun			
	Gaikwad Pooja Balkrishna			
G6	Kachi Aditi Jagdish	Machine Learning	Prof. B. D. Thorat	field crop management
	Shinde Dipak Naresh			
	Patil Vaishnavi Devendra			
	Borsare Shubham Tarudatta			
G7	Korade Tujay Kamalakar	Machine Learning	Prof. Pranjali Marne	Academic certificate verification
	Suryawadshi Aniket Sunil			
	Pawar Mayur Ravindra			
	Pandit Akash Fakirchand			
G8	Kshirsagar Vaibhav Mohan	Machine Learning	Prof. B. R. Bhatti	Systematic Review of Encryption
	Gawali Kartik Rakesh			
	Todkar Omkumar Murlidhar			
	Yewale Yash Dattatray			
	Kshirsagar Prathmesh Dilip			
	Kaluse Sahil Sanjay			





G9	Mandave Kunal Dilip Munde Abhijeet Bhagwat Umbarkar Kunal Sunil	IOT	Prof. K S. Khamkar	Impact of the internet
G10	Patankar Samarjeet Satish Gaikwad Sushil Pandurang Sonawane Sonal Eknath Bait Rukshita Dinesh	Machine Learning	Prof. B. R. Bhatti	Pet feeding & food dissipation
G11	Jadhav Dhiraj Anna Kirve Makrand Shashikant Koli Gaurav Rajendra Jadhav Hanumant Avinash	Machine Learning	Prof. Pranali Marne	Roadmap towards projects
G12	Tejas Chandrakant Padale Shivatara Harshada Sanjay Raut Pooja Sharad	Machine Learning	Prof. B. R. Bhatti	Detection of melanoma
G13	Jagdale Harshada Shivaji Gaikwad Shubhangi Suryakant Bhelke Shreya Umesh	IOT	Prof. S. B. Shirke	Real-Time weather detection notification
G14	Saste Shubham Jalindar Shinde Sandhya Prabhat Shilimkar Ashwini Vijay Devgirkar Vidya	Machine Learning	Prof. K S. Khamkar	Detection of phishing
G15	Bhosale Shweta Sharad Kunhaie Kajal Mohan Bhingare Isha Dilip Sunanda Muktarum Dere	AI	Prof. S. B. Shirke	Heart disease prediction
16	Ithape Shreya Santosh Gujar Sayali Satish Suryawanshi Komal Banudas Yele Pratiksha Jagish	Artificial Intelligence	Prof. B. D. Thorat	Crop & fertilizer prediction
17	Kumbhar Rutuja Dattatraya Shedge Pooja Sambhaji Khandale Kiran Prakash Khopade Ajit Dattatray	Machine Learning	Prof. K S. Khamkar	DoS Attack in CN
18	Attar Asfiyan Nazim Dhadave Pragati uddesh Chetan Datta Kanade Sonawane Shivam Laxman	AI	Prof. Pranali Marne	Blood donation management system
G19	Theurkar priyadarshan dnyanoba Lawande swapnil bhalchandra Borande shubham sandeep	Machine Learning	Prof. B. D. Thorat	COVID-19 Detection System
20	Dabade Suyash sunil Dhadave Ajinkya Rohidas Kamble Prashant	Machine learning	Prof. Pranali Marne	Driver Drowsiness detection for alert
21				

*B.D.T.*  
Prof. B. D. Thorat  
Project Coordinator & Head of  
Department





Rajgad Dnyanpeeth's

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Ref. RDTC/SCSCOE/Invitation/2022-23

Date: 12/09/2022

## NOTICE

All the B.E students are hereby informed that Project Review -I will be scheduled on 20/09/2022 .All the following points must be ready while coming for presentation.

### 1. PPT Presentation Points

Introduction

Problem Statement

System Architecture/Block Diagram

Project Scope

Modules of project

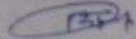
Mathematical Model of project

Hardware and Software Requirements

References

**NOTE: All the groups should visit/contact their guide for any queries and project work.**



  
Prof. B. D. Thorat  
HOD  
( Computer Engg. Dept.)





Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**  
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Department of Computer Engineering

Class-BE

A.Y 2022-23

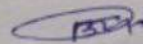
List Attendance Sheet -Review

Slup	Student Name	Project Domain	Project Title	Project Guide	Signature
G1	Bobade Prachi Santosh	Machine Learning	Sales Forecasting using learning-techniques	Prof. B.D. Thorat	Bobade
	Garud Akshada Anil				Garud
	Chavan Ritambara Shankar				Chavan
	Gorad Akshada Rajendra				Gorad
G2	More Priti Arvind	Cyber security	Multi-image steganography using AES	Prof. S.B. Shirke	More
	Shilimkar Namrata Rajendra				Shilimkar
	Dighe Supriya Dattatraya				Dighe
	Thombare Chandan Shekhar				Thombare
G3	Jagtap Gauravi Sopan	Machine Learning	AI search engine for cluster process	Prof. K.S. Khamkar	Jagtap
	Kanade Omkar Rajesh				Kanade
	Pawar Snehal Sunil				Pawar
	Kshirsagar Akash Mahesh				Kshirsagar
G4	Mandhare Rupali Laxman	Deep Learning	Stock-market price prediction	Prof. S.B. Shirke	Mandhare
	Pophale Kishori Vijay				Pophale
	Jadhav Shweta Yashwant				Jadhav
	Wadakar Mohini Sanjay				Wadakar
G5	Walhekar Abhinav Navnath	Machine Learning	Gent fraud allocation and tracking	Prof. B.R. Bhatti	Walhekar
	Jadhav Harshad Arjun				Jadhav
	Gaikwad Pooja Balkrishna				Gaikwad
	Kachi Aditi Jagdish				Kachi
G6	Shinde Dipak Naresh	Machine Learning & IOT	Field condition management	Prof. B.D. Thorat	Shinde
	Patil Vaishnavi Devendra				Patil
	Borsare Shubham Tarudatta				Borsare
	Korade Tujay Kamalakar				Korade
G7	Suryawanshi Aniket Sunil	Blockchain	Academic certificate verification using blockchain	Prof. P.M. Marne	Suryawanshi
	Pawar Mayur Ravindra				Pawar
	Pandit Akash Fakirchand				Pandit
	Kshirsagar Vaibhav Mohan				Kshirsagar
G8	Gawali Kartik Rakesh	Machine Learning	Systematic Review of encryption	Prof. B.R. Bhatti	Gawali
	Todkar Omkumar Muridhar				Todkar
	Yewale Yash Dattatray				Yewale
	Kshirsagar Prathmesh Dilip				Kshirsagar
G9	Kaluse Sahil Sanjay	IOT	Impact of the metaverse	Prof. K.S. Khamkar	Kaluse
	Mandave Kunal Dilip				Mandave
	Munde Abhijeet Bhagwat				Munde
	Umbarkar Kunal Sunil				Umbarkar
G10	Patankar Samarjeet Satish	ML	Pet feeding & food disposal	Prof. B.R. Bhatti	Patankar
	Gaikwad Sushil Pandurang				Gaikwad
	Sonawane Sonal Eknath				Sonawane
	Bait Rukshita Dinesh				Bait
G11	Jadhav Dhiraj Anna	Machine Learning	Roadmap towards Prospects	Prof. P.M. Marne	Jadhav
	Kirve Makrand Shashikant				Kirve
	Koli Gaurav Rajendra				Koli
	Jadhav Hanumant Avinash				Jadhav





G12	Tejas Chandrakant Padale	Machine Learning	Detection of Melanoma	Prof. B. R. Bhatti	Res Her Ras
	Shivatara Harshada Sanjay				
	Raut Pooja Sharad				
G13	Jagdale Harshada Shivaji	Machine Learning	Real-time weather detection & send notifications	Prof. S. B. Shirke	Gadgil Shinde Shirke Shirke
	Gaikwad Shubhangi Suryakant				
	Bhelke Shreya Umesh				
G14	Akash Mahesh Kshirsagar	Machine Learning	Detection of phishing	Prof. K. S. Khamkar	Joshi S S Rus
	Saste Shubham Jalindar				
	Shinde Sandhya Prabhat				
G15	Shilimkar Ashwini Vijay	Broad Machine Learning	Heart disease Prediction Using ML	Prof. S. B. Shirke	Bhosale Kinhal Shirke Shirke
	Devgirikar Vidya				
	Bhosale Shweta Sharad				
16	Kinhale Kajal Mohan	Machine Learning	Using ML crop & fertilizers prediction for Drip Irrigation	Prof. B. D. Thorat	Shirke Shirke Shirke
	Bhingare Isha Dilip				
	Sunanda Muktararam Dere				
17	Ithape Shreya Santosh	Machine Learning	Botnet attack in CN	Prof. K. S. Khamkar	K. S. S K. S. K. S.
	Gujar Sayali Satish				
	Suryawanshi Komal Banudas				
18	Yele Pratiksha Jagish	Blockchain Technology	Blood donation management system using Blockchain Tech.	Prof. P. M. Marne	Shirke Shirke Shirke
	Kumbhar Rutuja Dattatraya				
	Shedje Pooja Sambhaji				
G19	Khandale Kiran Prakash	Machine Learning	Covid-19 Detection system	Prof. B. D. Thorat	Shirke S Shirke
	Khopade Ajit Dattatray				
	Attar Asfiyan Nazim				
20	Dhadave Pragati uddesh	Machine Learning	Driver drowsiness alert detection using machine learning	Prof. P. M. Marne	Shirke Shirke Shirke
	Chetan Datta Kanade				
	Sonawane Shivam Laxman				
G19	Theurkar priyadarshan dnyanoba	Machine Learning	Covid-19 Detection system	Prof. B. D. Thorat	Shirke S Shirke
	Lawande swapnil bhalchandra				
	Borande shubham sandeep				
20	Yash Ingle	Machine Learning	Driver drowsiness alert detection using machine learning	Prof. P. M. Marne	Shirke Shirke Shirke
	Dabade Suyash sunil				
	Dhadave Ajinkya Rohidas				
	Kamble Prashant				

  
Prof. B. D. Thorat

Project Coordinator & Head of Department







Rajgad Dnyanpeeth's

**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**

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Ref. RDTC/SCSCOE/Invitation/2022-23

Date: 20/02/2023

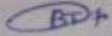
## NOTICE

All the B.E students are hereby informed that online Project Review-II will be scheduled on 01/03/2023.

All the following points must be ready during presentation:

1. Complete Project Report (Soft Copy) as per template provided earlier.
2. Paper ready for publication (As per template given)
3. PPT Presentation covering all suggestions given in earlier reviews.
4. Completed Project Log Book, Log book with all respects like sign of guide, Synopsis, Sign of project members wherever required.
5. Hardcopy of Synopsis, SRS, Project Log Book, Project approval form and project book with guide sign
6. Hardcopy of Semester I Project Assignments



  
Prof. B. D. Thorat  
HOD  
( Computer Engg. Dept.)



Rajgad Dnyanpeeth's  
**SHRI CHHATRAPATI SHIVAJIRAJE COLLEGE OF ENGINEERING**  
 S. No. 237, Satara-Pune, NH-4, Dhangawadi, Tal. Bhor, Dist. Pune - 412205 (MS), India

Department of Computer Engineering

Class-BE

A.Y 2022-23

List Attendance Sheet -Review

Slup	Student Name	Project Domain	Project Title	Project Guide	Signature
G1	Bobade Prachi Santosh	Machine Learning	Sales forecasting using ML learning techniques	Prof.B.D.Thorat	<i>Bobade Prachi</i>
	Garud Akshada Anil				
	Chavan Ritambara Shankar				
	Gorad Akshada Rajendra				
G2	More Prili Arvind	Cyber Security	Multi-Image Steganography using AES	Prof.S.B.Shirke	<i>More Prili</i>
	Shilimkar Namrata Rajendra				
	Dighe Supriya Dattatraya				
	Thombare Chandan Shekhar				
G3	Jagtap Gauravi Sopan	Machine Learning	AI search engine for cluster presentation	Prof.K.S.Khamkar	<i>Jagtap Gauravi</i>
	Kanade Omkar Rajesh				
	Pawar Snehal Sunil				
	Kshirsagar Akash Mahesh				
G4	Mandhare Rupali Laxman	Deep Learning	Stock - market price prediction	Prof.S.B.Shirke	<i>Mandhare Rupali</i>
	Pophale Kishori Vijay				
	Jadhav Shweta Yashwant				
	Wadakar Mohini Sanjay				
G5	Walhekar Abhinav Navnath	Machine Learning	Gest fraud detection and tracking	Prof.B.R.Bhatti	<i>Walhekar Abhinav</i>
	Jadhav Harshad Arjun				
	Gaikwad Pooja Balkrishna				
	Kachi Aditi Jagdish				
G6	Shinde Dipak Naresh	Machine Learning	Field condition management	Prof.B.D.Thorat	<i>Shinde Dipak</i>
	Patil Vaishnavi Devendra				
	Borsare Shubham Tarudatta				
	Korade Tujay Kamalakar				
G7	Suryawanshi Aniket Sunil	Block chain	Academic certificate verification using QR	Prof.P.M.Marne	<i>Suryawanshi Aniket</i>
	Pawar Mayur Ravindra				
	Pandit Akash Fakirchand				
	Kshirsagar Vaibhav Mohan				
G8	Gawali Kartik Rakesh	Machine Learning	Systematic Review of Encryption	Prof.B.R.Bhatti	<i>Gawali Kartik</i>
	Todkar Omkumar Murlidhar				
	Yewale Yash Dattatray				
	Kshirsagar Prathmesh Dilip				





G9	Kaluse Sahil Sanjay	IOT	Impact of the Metam	Prof.K.S.Khamkar	Kaluse Sahil
	Mandave Kunal Dilip				Mandave Kunal
	Munde Abhijeet Bhagwat				Munde Abhijeet
	Umbarkar Kunal Sunil				Umbarkar Kunal
G10	Patankar Samarjeet Satish	ML	Pet feeding & food disposal	Prof.B.R.Bhatti	Patankar Samarjeet
	Gaikwad Sushil Pandurang				Gaikwad Sushil
	Sonawane Sonal Eknath				Sonawane Sonal
	Bait Rukshita Dinesh				Bait Rukshita
G11	Jadhav Dhiraj Anna	machine learning	Roadmap towards Prospects	Prof.P.M.Marne	Jadhav Dhiraj
	Kirve Makrand Shashikant				Kirve Makrand
	Koli Gaurav Rajendra				Koli Gaurav
	Jadhav Hanumant Avinash				Jadhav Hanumant
G12	Tejas Chandrakant Padale	Machine Learning	Detection of malware	Prof.B.R.Bhatti	Tejas Chandrakant
	Shivatare Harshada Sanjay				Shivatare Harshada
	Raut Pooja Sharad				Raut Pooja
G13	Jagadale Harshada Shivaji	Machine learning	Real-time weather detection & send notifications	Prof.S.B.Shirke	Jagadale Harshada
	Gaikwad Shubhangi Suryakant				Gaikwad Shubhangi
	Bhelke Shreya Umesh				Bhelke Shreya
	Akash Mahesh Kshirsagar				Akash Mahesh
G14	Saste Shubham Jalindar	Detection of phishing	Machine Learning	Prof.K.S.Khamkar	Saste Shubham
	Shinde Sandhya Prabhat				Shinde Sandhya
	Shilimkar Ashwini Vijay				Shilimkar Ashwini
	Devgirikar Vidya				Devgirikar Vidya
G15	Bhosale Shweta Sharad	Machine Learning	Heartdisease Prediction using ML	Prof.S.B.Shirke	Bhosale Shweta
	kinhale Kajal Mohan				kinhale Kajal
	Bhingare Isha Dilip				Bhingare Isha
	Sunanda Muktarlam Dere				Sunanda Muktarlam
16	Ithape Shreya Santosh	Machine Learning	Using ML, crop & fertilizers prediction for drip irrigation system	Prof.B.D.Thorat	Ithape Shreya
	Gujar Sayali Satish				Gujar Sayali
	Suryawanshi Komal Banudas				Suryawanshi Komal
	Yele Pratiksha Jagdish				Yele Pratiksha
17	Kumbhar Rutuja Dattatraya	Machine Learning	Botnet Attack in CN	Prof.K.S.Khamkar	Kumbhar Rutuja
	Shedge Pooja Sambhaji				Shedge Pooja
	Khandale Kiran Prakash				Khandale Kiran
	Khopade Ajit Dattatray				Khopade Ajit
18	Attar Asfiyan Nazim	Blockchain Technology	Blood donation management system using blockchain Tech	Prof.P.M.Marne	Attar Asfiyan
	Dhadave Pragati uddesh				Dhadave Pragati
	Chetan Datta Kanade				Chetan Datta
	Sonawane Shivam Laxman				Sonawane Shivam
G19	Theurkar priyadarshan dnyanoba	Machine Learning	Covid-19 Detection system	Prof.B.D.Thorat	Theurkar priyadarshan
	Lawande swapnil bhalchandra				Lawande swapnil
	Borande shubham sandeep				Borande shubham
20	Yash Ingle.	Machine Learning	Driver Drowsiness detection for Alert using Machine learning	Prof.P.M.Marne	Yash Ingle
	Dabade Suyash sunil				Dabade Suyash
	Dhadave Ajinkya Rohidas				Dhadave Ajinkya
	Kamble Prashant				Kamble Prashant

Prof. B. D. Thorat

Project Coordinator & Head of Department



Date: 21/08/2022

To,  
The Principal,  
Rajgad Dnyanpeeth's  
Shri chhatrapati shivajiraje college of engineering  
Pune

**Subject: - Internship/Sponsorship Letter**

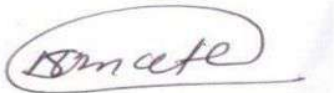
Respected Sir/Madam,

We would like to hereby confirm you, that **Mandhare Rupali Laxman, Popale Kishori Vijay, Jadhav Shweta Yashwant, Wadekar Mohini Sanjay** are students of Fourth Year Degree in Computer Engineering from your college who have been selected for carrying out the Final Year Project "**Stock Market Price Prediction**". They will work with our organization from 01/09/ 2022 to 15/03/2023.

The working schedule of their project will be 2 days a week from 11.00 am to 6.00 pm. The details and scope of this project will be provided to them from the beginning of their tenure at the company facility. Upon successful completion of the project, they will be issued a certificate. We will be required to submit a copy of the detailed report before completion of the project. We are sponsoring 5500/- amount for their project.

Congratulations and welcome to the team!

Thanks & Warm Regards,



**Somnath Lomate**  
(Director)  
L & D Infotech Private Limited



[www.Indinfotech.co.in](http://www.Indinfotech.co.in) [www.facebook.com/LDI2019](https://www.facebook.com/LDI2019) [info@Indinfotech.co.in](mailto:info@Indinfotech.co.in)

[Flat No. OP 302, Meghmalhar, G.No 87 to 90,PH -II,DSK Vishwa ,Pune-41.](#) [7887809708/ 8830274518](tel:7887809708)





# SmartBit

Smartness to your world

1. ITHAPE SHREYA SANTOSH
2. GUJAR SAYALI SATISH
3. SURYAWANSHI KOMAL BANUDAS
4. YELE PRATIKSHA JAGDISH

## Subject: Project Sponsorship

Dear Student

In reference to your application we would like to congratulate you on being selected for sponsorship with **SmartBit InfoTech** based at **PUNE** your training is scheduled to start effective **20/09/2022** for a period of 09 months. All of us at **SmartBit InfoTech** are excited that you will be joining our team!

As such, your sponsorship will include training/orientation and focus primarily on learning and developing new skills and gaining a deeper understanding of concepts through hands-on application of the knowledge you learned in class. We are offering the 5000/- fund for your project.

The project details and technical platform will be shared with you on or before Commencement of training

You should report for training at the following address:

**SmartBit InfoTech,  
Amey Apartment, New D.P Road,  
Near Allahabad Bank, New D P Road, Ward  
Aundh Pune 411007**

Again, congratulations and we look forward to working with you.

  
  
Director  
www.smartbitinfotech.in

[support@smartbitinfotech.in](mailto:support@smartbitinfotech.in)

5, Amaya Apartment, New D.P. Road, Aundh, Pune  
411007

+91 7066309722

+91 9423966686



Date: 23/10/2022

To  
The Principal,  
RDTC's SCSCOE, Dhangawadi  
Pune.

**Subject: Letter of Sponsorship for academic project**

This is to certify that the below mentioned students are working with us on the project "**Blood Donation Management System Using Blockchain Technology**". We would like to offer them a platform to nurture their skills & work on the project under our guidance. By becoming a part of this sponsorship program, following students abide to work on the mentioned technologies to execute their project with the help of technical experts' mentorship and training. Institute's assent for allowing them to work with us is appreciated. We are offering the fund 6000/- for their project.

- I. Attar Asfiyan Nazim
- II. Dhadave Pragati Uddesh
- III. Kanade Chetan Datta
- IV. Sonawane Shivam Laxman

Yours Sincerely,  
Authorit by



Mr.Pravin Padole  
Computer Division  
ProError Software Solutions  
Office No.20 Akshay Square  
Near Bank of Maharashtra Narhe  
Pune-41  
Contact-9504030306

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