SRI A.S.N.M GOVERNMENT COLLEGE (A),
PALAKOL, W.G.DT-534260.

DEPARTMENT OF MATHEMATICS

BRIDGE COURSE

2018-2019

Bridge Course

Course Objectives:

- Bridge courses are designed to help students transition from one Academic level to another.
- Students can be used to move from junior college to Degree College.
- Give students the confidence and skills to successfully transition to college and new curriculum.
- Bridge course gives them a breather, to prepare themselves before the onset of courses for first year degree programme.

Skills Achieved:

- Students get a stronger foundation in fundamental in Mathematics Concepts
- Students overcome any challenges they may face when transitioning to college-level coursework.

Values Achieved:

- This course helping students develop a more well-rounded understanding of core concepts in Mathematics.

Feedback of Students:

- Students expressed thanks to faculty by conducted the Bridge Course classes.
- Students also expressed that the fear in core subject will remove through this classes.
- Students expressed that they will learn the mathematics with free mind.

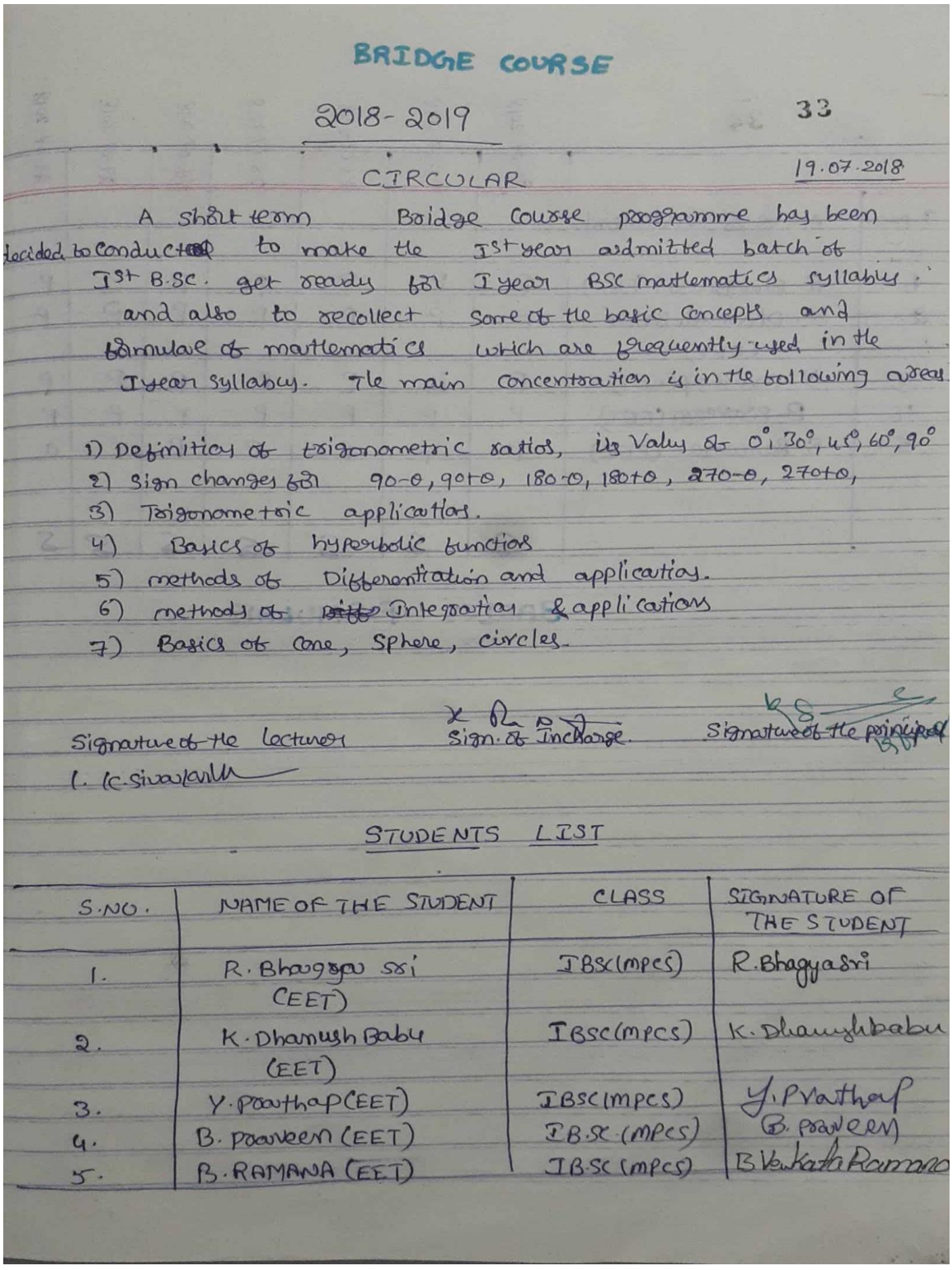
BRIDGE COURSE 2018-2019

The Department of Mathematics conducted Bridge Course for the Academic year 2018-2019 from 20-07-2018 to 28-07-2018 . The Department send the circular to first year M.P.C(TM), M.P.C(EM), M.P.Cs students on 19-07-2018 to attend classes students who came from non Mathematics (Vocational EET.,) in intermediate and interested students are attended for this Bridge Course. The mathematics lecturers explained Differentiation, Integration formulas and the Basics in mathematics in these classes.

The following areas were concentrated in these classes

- Definitions of Trigonometric Ratios and their Values $0^{\circ}, 30^{\circ}, 45^{\circ}, 60^{\circ}, 90^{\circ}$
- Sign changes for 90-θ, 90+θ, 180- θ , 180+ θ ,270- θ ,270+ θ
- Trigonometric applications
- Basics of hyperbolic functions
- Methods of Differentiation and applications
- Methods of Integration and applications
- Formulas related to Circles, Sphere and Cone

Circular



BRIDGE COURSE

2018-2019 33

CIRCULAR 19.07.2018

A short term Bridge Course programme has been decided to conduct to make the IST year admitted batch of IST B.Sc. get ready for I year BSc mathematics syllabus and also to recollect some of the basic concepts and formulae of mathematics which are frequently used in the I year syllabus. The main concentration is in the following areas

1) Definition of trigonometric ratios, its Value of $0°, 30°, 45°, 60°, 90°$
2) Sign changes for $90-\theta, 90+\theta, 180-\theta, 180+\theta, 270-\theta, 270+\theta,$
3) Trigonometric applications.
4) Basics of hyperbolic functions
5) methods of Differentiation and applications.
6) methods of Integration & applications
7) Basics of cone, Sphere, circles.

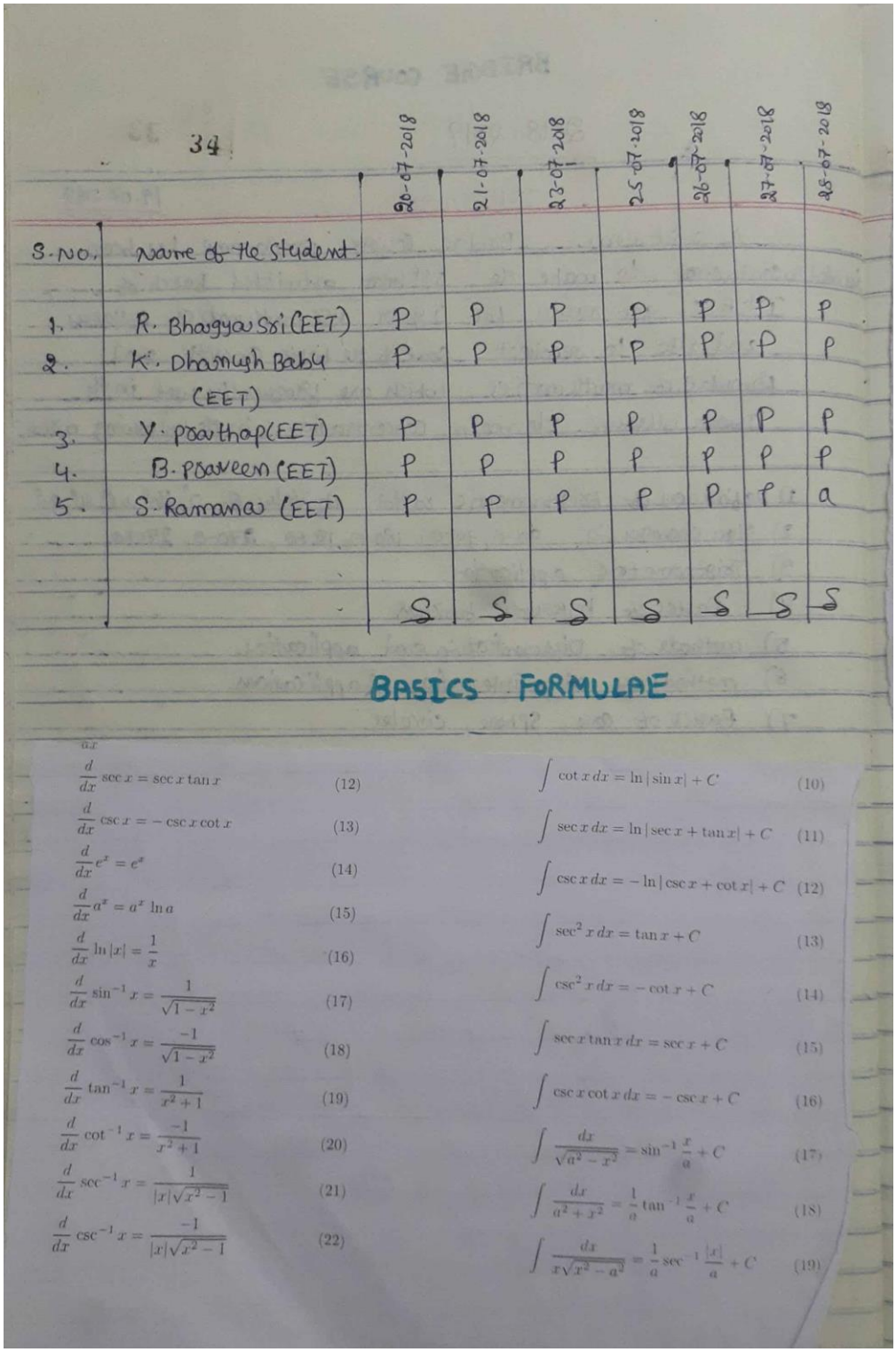
Signature of the lecturer Sign. of Incharge Signature of the principal

1. K. Sivalakshmi

STUDENTS LIST

S.NO.	NAME OF THE STUDENT	CLASS	SIGNATURE OF THE STUDENT
1.	R. Bhagyasri (CEET)	IBSc(MPCS)	R. Bhagyasri
2.	K. Dhanush Babu (CEET)	IBSc(MPCS)	K. Dhanushbabu
3.	Y. Prathap (CEET)	IBSc(MPCS)	Y. Prathap
4.	B. Praveen (CEET)	IB.Sc.(MPCS)	B. Praveen
5.	B. RAMANA (CEET)	IB.Sc(MPCS)	B. Venkata Ramana

Attendance and Study material



34

S.NO.	Name of the Student	20-07-2018	21-07-2018	23-07-2018	25-07-2018	26-07-2018	27-07-2018	28-07-2018
1.	R. Bhagya Sri (EET)	P	P	P	P	P	P	P
2.	K. Dhanush Babu (EET)	P	P	P	P	P	P	P
3.	Y. Prathap (EET)	P	P	P	P	P	P	P
4.	B. Praveen (EET)	P	P	P	P	P	P	P
5.	S. Ramana (EET)	P	P	P	P	P	P	a
		S	S	S	S	S	S	S

BASICS FORMULAE

$$\frac{d}{dx}\sec x = \sec x \tan x \quad (12)$$

$$\frac{d}{dx}\csc x = -\csc x \cot x \quad (13)$$

$$\frac{d}{dx}e^x = e^x \quad (14)$$

$$\frac{d}{dx}a^x = a^x \ln a \quad (15)$$

$$\frac{d}{dx}\ln|x| = \frac{1}{x} \quad (16)$$

$$\frac{d}{dx}\sin^{-1}x = \frac{1}{\sqrt{1-x^2}} \quad (17)$$

$$\frac{d}{dx}\cos^{-1}x = \frac{-1}{\sqrt{1-x^2}} \quad (18)$$

$$\frac{d}{dx}\tan^{-1}x = \frac{1}{x^2+1} \quad (19)$$

$$\frac{d}{dx}\cot^{-1}x = \frac{-1}{x^2+1} \quad (20)$$

$$\frac{d}{dx}\sec^{-1}x = \frac{1}{|x|\sqrt{x^2-1}} \quad (21)$$

$$\frac{d}{dx}\csc^{-1}x = \frac{-1}{|x|\sqrt{x^2-1}} \quad (22)$$

$$\int \cot x\,dx = \ln|\sin x| + C \quad (10)$$

$$\int \sec x\,dx = \ln|\sec x + \tan x| + C \quad (11)$$

$$\int \csc x\,dx = -\ln|\csc x + \cot x| + C \quad (12)$$

$$\int \sec^2 x\,dx = \tan x + C \quad (13)$$

$$\int \csc^2 x\,dx = -\cot x + C \quad (14)$$

$$\int \sec x \tan x\,dx = \sec x + C \quad (15)$$

$$\int \csc x \cot x\,dx = -\csc x + C \quad (16)$$

$$\int \frac{dx}{\sqrt{a^2-x^2}} = \sin^{-1}\frac{x}{a} + C \quad (17)$$

$$\int \frac{dx}{a^2+x^2} = \frac{1}{a}\tan^{-1}\frac{x}{a} + C \quad (18)$$

$$\int \frac{dx}{x\sqrt{x^2-a^2}} = \frac{1}{a}\sec^{-1}\frac{|x|}{a} + C \quad (19)$$

FUNDAMENTALS

Differentiation Formulas

$$\frac{d}{dx}k = 0 \quad (1)$$

$$\frac{d}{dx}[f(x) \pm g(x)] = f'(x) \pm g'(x) \quad (2)$$

$$\frac{d}{dx}[k \cdot f(x)] = k \cdot f'(x) \quad (3)$$

$$\frac{d}{dx}[f(x)g(x)] = f(x)g'(x) + g(x)f'(x) \quad (4)$$

$$\frac{d}{dx}\left(\frac{f(x)}{g(x)}\right) = \frac{g(x)f'(x) - f(x)g'(x)}{[g(x)]^2} \quad (5)$$

$$\frac{d}{dx}f(g(x)) = f'(g(x)) \cdot g'(x) \quad (6)$$

$$\frac{d}{dx}x^n = nx^{n-1} \quad (7)$$

$$\frac{d}{dx}\sin x = \cos x \quad (8)$$

$$\frac{d}{dx}\cos x = -\sin x \quad (9)$$

$$\frac{d}{dx}\tan x = \sec^2 x \quad (10)$$

$$\frac{d}{dx}\cot x = -\csc^2 x \quad (11)$$

Integration Formulas

$$\int dx = x + C \quad (1)$$

$$\int x^n\,dx = \frac{x^{n+1}}{n+1} + C \quad (2)$$

$$\int \frac{dx}{x} = \ln|x| + C \quad (3)$$

$$\int e^x\,dx = e^x + C \quad (4)$$

$$\int a^x\,dx = \frac{1}{\ln a}a^x + C \quad (5)$$

$$\int \ln x\,dx = x\ln x - x + C \quad (6)$$

$$\int \sin x\,dx = -\cos x + C \quad (7)$$

$$\int \cos x\,dx = \sin x + C \quad (8)$$

$$\int \tan x\,dx = -\ln|\cos x| + C \quad (9)$$

BASICS

Trig functions	$\sin x$	$\cos x$
	$\cos x$	$-\sin x$
	$\tan x$	$\frac{1}{\cos^2 x} = 1 + \tan^2 x$
	$\arctan x = \tan^{-1} x$	$\frac{1}{1+x^2}$
	$\arcsin x = \sin^{-1} x$	$\frac{1}{\sqrt{1-x^2}}$
Hyperbolic Trig	$\sinh x$	$\cosh x$
	$\cosh x$	$\sinh x$
	$\tanh x$	$\frac{1}{\cosh^2 x}$
	$\sinh^{-1} x$	$\frac{1}{\sqrt{1+x^2}}$
	$\tanh^{-1} x$	$\frac{1}{1-x^2}$