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

DEPARTMENT OF MATHEMATICS

BRIDGE COURSE

2017-2018

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 2017-2018

The Department of Mathematics conducted Bridge Course for the Academic year 2017-2018 from   24-07-2017 to 31-07-2017. The Department send the circular to first year   M.P.C(TM), M.P.C(EM),   M.P.Cs students   to attend classes students who are came from non Maths in intermediate and interested students are attended for this Bridge Course. The mathematics lecturers explained   Differntiation , Integration formulas and the Basics in mathematics in these classes.

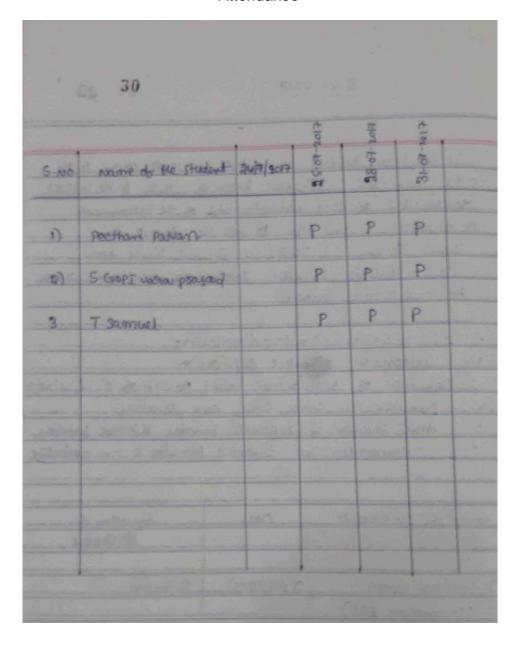The following areas were concentrated in these classes

- ➢ Differentiation formulas and applications

- ➢ Integration formulas and applications

- ➢ Definitions of Trigonometric Ratios and their Values $0°, 30°, 45°, 60°, 90°$

- ➢ Basic formula of hyperbolic functions and inverse functions

- ➢ Formulas related to Circle, Sphere and Cone

Circular

2017-2018   29

It has been decided to conduct a bridge course to the newly admitted Ist year batch of B.Sc. in the subject Mathematics for good understanding of the syllabus of Mathematics and also to fill the gaps of their lower stages. Topics are covered listed below.
These students completed Intermediate (vocational) course in non-science branches.

1) Differentiation Formulae & applications.
2) Integration Formulae & applications
3) Definition of trigonometric ratios, the value of $0°, 30°, 45°, 60°, 90°$
4) Formulae for sphere, circle, cone equations.
5) Basic formula of hyperbolic functions & inverse functions.
6) Trigonometric sum, difference formulas & some application

Name of the student	Class	Signature of the student.
1) Peethani Pavan (Intermediate EET)	I BSC(MPCS)	P. Pavan
2) S. GOPI VARA PRASAD (open school)	I BSC(MPCS)	S. G.V.prasad
3) T. Samuel (EET group)	I BSC(MPCS)	T. Sam

K. Sivarathi
Signature of the Lecturer

Attendance

S.No	name of the student	24/7/2017	27-07-2017	28-07-2017	30-07-2017
1)	Peethani Pavan		P	P	P
2)	S Gopi vasu prasad		P	P	P
3	T Samuel		P	P	P

Study Material

BASIC FORMULAE 31

Integration Formulas

The following list provides some of the rules for finding integrals and a few of the common antiderivatives of functions.

Linearity $\int af(x) + bg(x)\,dx = a \int f(x)\,dx + b \int g(x)\,dx$

Substitution $\int f(w(x))w'(x)\,dx = \int f(w)\,dw$

Integration by parts $\int u(x)v'(x)\,dx = u(x)v(x) - \int u'(x)v(x)\,dx$

Basic Functions

$\int x^n\,dx = \dfrac{x^{n+1}}{n+1} + C$ $\int \dfrac{1}{x}\,dx = \ln|x| + C$

$\int e^{ax}\,dx = \dfrac{1}{a}e^x + C$ $\int a^x\,dx = \dfrac{a^x}{\ln a} + C$

Trigonometric functions

$\int \sin x\,dx = -\cos x + C$ $\int \cos x\,dx = \sin x + C$

$\int \dfrac{1}{\cos^2 x}\,dx = \tan x + C$ $\int \tan x\,dx = -\ln|\cos x| + C$

$\int \cot x\,dx = \ln|\sin x| + C$

BASICS

Hyperbolic Trig functions

$\int \sinh x\,dx = \cosh x + C$ $\int \cosh x\,dx = \sinh x + C$

$\int \tanh x\,dx = \ln(\cosh x) + C$ $\int \coth x\,dx = \ln|\sinh x| + C$

Functions with $a^2 \pm x^2$

$\int \dfrac{dx}{\sqrt{a^2 - x^2}} = \sin^{-1}\left(\dfrac{x}{a}\right) + C$ $\int \dfrac{dx}{a^2 + x^2} = \dfrac{1}{a}\tan^{-1}\left(\dfrac{x}{a}\right) + C$

$\int \dfrac{dx}{a^2 - x^2} = \dfrac{1}{2a}\ln\left|\dfrac{x+a}{x-a}\right| + C$

$\int \dfrac{dx}{\sqrt{x^2 - a^2}} = \cosh^{-1}\left(\dfrac{x}{a}\right) + C$ $\int \dfrac{dx}{\sqrt{x^2 + a^2}} = \sinh^{-1}\left(\dfrac{x}{a}\right) + C$

Inverse Functions

$\int \ln x\,dx = x\ln x - x + C$ $\int \arcsin x\,dx = x\arcsin x + \sqrt{1 - x^2} + C$

$\int \arctan x = x\arctan x - \dfrac{1}{2}\ln(1 + x^2) + C$