Govt. Polytechnic Panchkula

Name Of the Faculty:- Neeru

Discipline:-Applied Science

Year:-Ist

Subject:-Mathematics

Lesson Plan Duration:-30 weeks(2020-21)

** Work Load(Lecture/Practical) per week(in hours):- 03(Lectures)+01(Tutorial)

Week	Theory/Tutorial	
	Lecture day	Topic (Including assignment/test)
Ist	1st	Introduction to syllabus and evaluation scheme
	2nd	**Unit1 :Algebra**:- Law of indices,formula of factorisation and expansion i.e. $(a+b)^2$, (a^2+b^2) etc.
	3rd	Partial fraction:-Definition of polynomial fraction proper and improper fractions and definition of partial fractions .
	4th	Tutorial(Ist group)-Problems of above topics
	5th	Tutorial(IInd group)-Problems of above topics
2nd	6th	To resolve proper fraction into partial fraction with denominator containing non-repeated linear factors only.
	7th	Complex Numbers:-Definition of a complex number,real and imaginary parts of a complex number
	8th	Polar and Cartesian form and their inter conversion
	9th	Tutorial(Ist group)-Problems of above topics
	10th	Tutorial(IInd group)-Problems of above topics
3rd	11th	Conjugate of a complex number,modulus and amplitude
	12th	Addition,subtraction,multiplication and division of a complex number
	13th	Logarithms and its basic proprerties-part-1
	14th	Tutorial(Ist group)-Problems of above topics
	15th	Tutorial(IInd group)-Problems of above topics
4th	16th	Logarithms and its basic proprerties-part-2
	17th	Logarithms and its basic proprerties-part-3
	18th	Determinants and Matrices-Evaluation of determinants (upto 3rdorder)by Laplace
	19th	Tutorial(Ist group)-Problems of above topics
	20th	Tutorial(IInd group)-Problems of above topics
5th	21st	Solution of Equations(upto 3 unknowns)by Cramer's rule.
	22nd	Definition of Matrices and its Types
	23rd	Addition, Subtraction of matrices(upto 2nd order)
	24th	Tutorial(Ist group)-Problems of above topics
	25th	Tutorial(IInd group)-Problems of above topics
6th	26th	Multiplication of Matrices upto (2nd order)
	27th	Permutation and Combination:-Formula i.e. value of ^nP_r and ^nC_r
	28th	Binomial Theorem for positive integral index:-Expansion only
	29th	Tutorial(Ist group)-Problems of above topics(Ist Assignment)
	30th	Tutorial(IInd group)-Problems of above topics(Ist Assignment)
7th	31st	General term of Binomial Theorem,Simple problems
	32nd	Revision
	33rd	Revision
	34th	Revision(Group-1)
	35th	Revision(Group-2)
8th	36th	Unit2: Trignometry:- Concept of Angle,Measurement of Angle
	37th	T-Ratios of standard angles($0^0,30^0,45^0$ etc)and fundamental Identities,Allied angles(without proof)
	38th	Sum.Difference formulae and their applications(without proof)
	39th	Tutorial(Ist group)-Problems of above topics
	40th	Tutorial(IInd group)-Problems of above topics

	41st	Revision
	42nd	First Sessional Test
9th	43rd	First Sessional Test
	44th	First Sessional Test
	45th	First Sessional Test

Week	Theory/Tutorial	
	Lecture	Topic (Including assignment/test)
10th	46th	Product Formulae(Transformation of product to sum,difference and vice versa)
	47th	Applicatios of Trignometric terms in engineering problems such as to find an angle of elevation ,height,distance etc.part-1
	48th	Applicatios of Trignometric terms in engineering problems such as to find an angle of elevation ,height,distance etc.part2
	49th	Tutorial(Ist group)-Problems of above topics(2nd Assignment)
	50th	Tutorial(IInd group)-Problems of above topics(2nd Assignment)
11th	51st	Unit3: Co-ordinate Geometry:- Point:Distance Formula,Mid Point Formula
	52nd	Centroid of Triangle and Area of Triangle
	53rd	Straight Line:Slope of line
	54th	Tutorial(Ist group)-Problems of above topics
	55th	Tutorial(IInd group)-Problems of above topics
12th	56th	Equation of a straight line in various standard forms (without proof):(slope intercept form,intercept form,one point form)
	57th	Equation of a straight line in various standard forms (without proof):(two point form,
	58th	Angle between two straight lines
	59th	Tutorial(Ist group)-Problems of above topics
	60th	Tutorial(IInd group)-Problems of above topics
13th	61st	Circle:-General Equation of circle and identification of centre and radius of circle
	62nd	To find the equation of circle ,given centre and radius
	63rd	To find the equation of circle ,given coordinate of end points of a diameter.
	64th	Tutorial(Ist group)-Problems of above topics(3rd Assignment)
	65th	Tutorial(IInd group)-Problems of above topics(3rd Assignment)
14th	66th	Unit:-4-Differential Calculus:Definition of Function:Concept of Limits(Introduction only)
	67th	Problems related to four standard limits.
	68th	Differentiation of standard functions(only formulas)
	69th	Tutorial(Ist group)-Problems of above topics
	70th	Tutorial(IInd group)-Problems of above topics
15th	71st	Differentiation of algebraic function,Trignometric functions
	72nd	Differentiation of exponential functions,Logarithmic functions
	73rd	Differentiation of sum of functions.
	74th	Tutorial(Ist group)-Problems of above topics
	75th	Tutorial(IInd group)-Problems of above topics
16th	76th	Differentiation of product of functions.
	77th	Differentiation of quotient of functions.
	78th	Successive differentiation (up to 2nd order)
	79th	Tutorial(Ist group)-Problems of above topics
	80th	Tutorial(IInd group)-Problems of above topics
17th	81st	Revision
	82nd	Revision
	83rd	Revision
	84th	Revision
	85th	Revision
	86th	Revision
	87th	Second Sessional

Week	Lecture day	Topic (Including assignment/test)
18th	88th	Second Sessional
	89th	Second Sessional
	90th	Second Sessional
19th	91st	Application of Differential Calculus in :-Rate Measure
	92nd	Application of Differential Calculus in :-Maxima& Minima
	93rd	Application of Differential Calculus in :-Maxima& Minima
	94th	Tutorial(Ist group)-Problems of above topics(4th Assignment)
	95th	Tutorial(IInd group)-Problems of above topics(4th Assignment)
20th	96th	Unit5:-Integral Claculus:-Integration as inverse operation of differentiation with simple examples.
	97th	Simple standard integral.
	98th	Integration of sum, difference of functions.
	99th	Tutorial(Ist group)-Problems of above topics
	100th	Tutorial(IInd group)-Problems of above topics

Week	Theory/Tutorial	
	Lecture day	Topic (Including assignment/test)
21st	101st	Integration by parts.
	102nd	Evaluation of definite Integral of functions with given limits
	103rd	Evaluation of definite integral of sinx power n and limit is 0 to ∏/2
	104th	Tutorial(Ist group)-Problems of above topics
	105th	Tutorial(IInd group)-Problems of above topics
22nd	106th	Evaluation of definite integral of cosx power n and limit is 0 to ∏/2
	107th	Evaluation of definite integral of product of sinx power n and cosx power n and limit is 0 to ∏/2
	108th	Application of Integration :- for evaluation of area under the curve and axis.(simple problems where the limits are given)
	109th	Tutorial(Ist group)-Problems of above topics
	110th	Tutorial(IInd group)-Problems of above topics
23rd	111th	Continuation of evaluation of area under curve and axes
	112th	Numerical integration by Trapezoidal rule
	113th	Continuation of Trapezoidal rule
	114th	Tutorial(Ist group)-Problems of above topics
	115th	Tutorial(IInd group)-Problems of above topics
24th	116th	Numerical integration by simpson's 1/3 rule
	117th	Continuation of Simpson's rule
	118th	Problems related to Numerical Integration
	119th	Tutorial(Ist group)-Problems of above topics(5th Assignment)
	120th	Tutorial(IInd group)-Problems of above topics(5th Assignment)
25th	121st	Unit6:-Differential Equations:-Definition,Order,Degree and linearity of an ordinary differential Equation
	122nd	Problems of Differential Equations related to order,degree and linearity
	123rd	Solution of first order and first degree differential equations by variable seperable method(simple problems)part-1
	124th	Tutorial(Ist group)-Problems of above topics
	125th	Tutorial(IInd group)-Problems of above topics
26th	126th	Solution of first order and first degree differential equations by variable seperable method(simple problems)part-2
	127th	Unit:-7:-Statistics:-Measure of Central Tendency:Mean
	128th	Measure of Central Tendency:Median
	129th	Tutorial(Ist group)-Problems of above topics
	130th	Tutorial(IInd group)-Problems of above topics
	131st	Measure of Central Tendency:Mode
	132nd	Measure of Dispersion:Mean Deviation from Mean

27th	133rd	Problems of Mean Deviation
	134th	Tutorial(Ist group)-Problems of above topics
	135th	Tutorial(IInd group)-Problems of above topics
28th	136th	Standard Deviation-1
	137th	Standard Deviation-2
	138th	Coffecient of Rank Correlation
	139th	Tutorial(Ist group)-Problems of above topics(6th Assignment)
	140th	Tutorial(IInd group)-Problems of above topics(6th Assignment)
29th	141st	Revision
	142nd	Revision
	143rd	Revision
	144th	Revision(Group-1)
	145th	Revision(Group-2)
30th	146th	Revision
	147th	Revision
	148th	Revision
	149th	Revision(Group-1)
	150th	Revision(Group-2)
31st	151st	Revision
	152nd	Revision
	153rd	Revision
	154th	Revision(Group-1)
	155th	Revision(Group-2)
32nd	156th	Revision
	157th	Revision
	158th	Revision
	159th	Revision(Group-1)
	160th	Revision(Group-2)