



**ANJUMAN-I-ISLAM'S
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL**

Approved by : All India Council for Technical Education, Council of Architecture, Pharmacy Council of India New Delhi,
Recognised by : Directorate of Technical Education, Govt. of Maharashtra, Affiliated to : University of Mumbai.

- SCHOOL OF ENGINEERING & TECHNOLOGY
- SCHOOL OF PHARMACY
- SCHOOL OF ARCHITECTURE

DEPARTMENT OF ELECTRICAL ENGINEERING

REV:00	QUESTION PAPER UT II	EXM-04(b)
CLASS:- S. E. EE		SEM:- III
SUBJECT:- Applied Mathematics III (ECC 301)		DATE:- 23/10/2018
DURATION:- 60 min.		MARKS:- 20

Q.01 (8 Marks)		Marks	CO
a)	Find the values of a,b,c if vector F is Irrotational. $\vec{F} = (a x y + b z^3) i + (3 x^2 - c z) j + (3 x z^2 - y) k$	02	CO4
b)	Find the directional derivative of $\phi = x^2 y \cos z$ at $(1, 2, \pi/2)$ in the direction of vector $2i + 3j + 2k$.	02	CO4
c)	Evaluate line Integral $\int F.dr$ for $\vec{F} = (3 x^2 + 6 y) i - (14 y z) j + (20 x z^2) k$ from $t = 0$ to 1 Along the curve $x = t, y = t^2$ and $z = t^3$.	04	CO4
Q.02 Solve: (12 Marks)			
a)	Solve differential equation using Laplace Transforms. $\frac{d^2y}{dt^2} + 4 \frac{dy}{dt} = -8t$ with $y(0) = 0$ and $y'(0) = 0$ OR Find Inverse Laplace Transform of $\frac{s}{(s^2+4)(s^2+1)}$ using Convolution Theorem .	06	CO1
b)	Write Fourier series for $f(x) = \sqrt{1 - \cos x}$ in $[0 2\pi]$ OR Write Fourier series for $f(x) = 2x - x^2$ in $[0 3]$	06	CO2

CRITERION: 2.2.2, 3.2.2.

FILE NO : P25, P31

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DEPARTMENT OF ELECTRICAL ENGINEERING

REV:00	QUESTION PAPER CLASS TEST 02	EXM-04 B
CLASS:- SE		SEM:-III
COURSE:-CNCPG		DATE:- 24/10/2018
DURATION:- 60 min.		MARKS:- 20
Q.01 Attempt any two: (08 Marks)		Marks
a)	Explain Nuclear fission and fusion.	4
b)	Explain the different types of hydro power plant.	4
c)	Explain Francis turbine used in hydro power plant.	4
Q.02 Attempt any one: (12 Marks)		CO
a)	Explain important factors governed for selection of site of hydro power plant. Also state advantages & disadvantages of the plant.	12
b)	Explain PWR reactor used in Nuclear power plant.	12
c)	State advantages and disadvantages of gas turbine power plant.	12

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REV:00	QUESTION PAPER CLASS TEST 02	EXM-04 B	
CLASS:- SE		SEM:-III	
COURSE:- EEM		DATE:- 24/10/18	
DURATION:- 60 min.		MARKS:- 20	
Q.01 Attempt any ONE: (08 Marks)		Marks	CO
a)	EXPLAIN WITH NEAT DIAGRAM DIGITAL ENERGY METER	8	CO1
b)	WRITE SHORT NOTE ON EXTENSION OF RANGE OF SHUNT AMMETER	8	CO2
Q.02 Attempt any ONE: (12 Marks)			
a)	EXPLAIN CONSTRUCTION AND WORKING OF PMMC INSTRUMENT. ALSO DERIVE EQUATION FOR DEFLECTING TORQUE AND DEFLECTION θ . WHAT IS THE SHAPE OF THE SCALE.	12	CO1
b)	DESCRIBE CONSTRUCTION, WORKING PRINCIPLE, AND THEORY OF DYNAMOMETER TYPE WATTMETER	12	CO1

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CRITERION :
2.2.2, 3.2.2

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REV:00	<u>QUESTION PAPER CLASS TEST 02</u>	EXM-04 B
CLASS:- SE		SEM:-III
COURSE:- ELECTRICAL EDC		DATE:- 23/10/2018
DURATION:- 60 min.		MARKS:- 20

Q.01 Attempt any two: (08 Marks)		Marks	CO
a)	State and Explain Barkhausen's criteria for sustained oscillations.	4	6
b)	Determine the operating point parameters V_{GSQ} , I_{DQ} and V_{DSQ} for the Fixed Bias circuit. Assume $I_{DSS} = 8\text{mA}$ and $V_P = -8\text{V}$, $R_D = 2\text{k}\Omega$, $R_G = 1\text{M}\Omega$, $V_{DD} = 16\text{V}$ and $V_{GG} = -2\text{V}$.	4	4
c)	Explain the Effect of negative feedback on voltage gain, input impedance, output impedance, and bandwidth	4	5

Q.02 Attempt any two: (12 Marks)		Marks	CO
a)	Analyse Voltage Series Negative feedback Amplifier with respect to Input Resistance, Output Resistance and Voltage gain.	6	5
b)	Explain Hartley oscillator and derive the formula for its frequency of oscillations.	6	6
c)	Explain the Construction and Working of D-MOSFET with the help of its characteristics.	6	4

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CLASS:- SE COURSE:-EMC-1 DURATION:- 60 MIN. SEM:-III MARKS:- 20	DATE:- 25/10/18	
Q.01 attempt any one: (08 marks)		Mark Co
A	Explain the term step angle and stepping rate in stepper motor. Also determine the step angle of a variable reluctance stepper motor with 12 teeth in stator and 8 rotor teeth. State the applications of stator motor	8 CO6
B	Explain construction and working the various types of stepper motor	8 CO6
Q.02 attempt any two one: (12 marks)		
A	Hopkinson's test on two shunt machines gave the following results at full load : line voltage 200V, line current 40A excluding field currents , motor armature current 350A and field currents 4A and 3A. Calculate efficiency of each machine. Armature circuit resistance of each machine is 0.02 ohm.	12 CO5
B	A 20HP 220V shunt motor takes a full load current of 82A, speed 1000 rpm, armature resistance 0.1 ohm , shunt field resistances 110 ohm . It is to be braked by plugging. What resistance must be placed in series to limit current to 120V? Find also the initial valve of braking torque	12 CO4



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