

KALSEKAR TECHNICAL CAMPUS, NEW PANYEL
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	ÿ	EXM-04(b)
CLASS:- S. E. EE		SEM:	- 111
SUBJECT:- Applied Mathematics III (ECC 301)		DATE	:- 2 % /10 / 2018
DURATION:- 60 min.		MAR	KS:- 20

Q.0	1 (8 Marks)	Marks	со
a)	Find the values of a,b,c if vector F is Irrotational.	C+2_	CO4
	\vec{F} = (a x y + b z ³) i + (3 x ² - c z) j + (3 x z ² - y) k		
b)	Find the directional derivative of $\emptyset = x^2 y \cos z$ 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	04	CO4
	Along the curve $x=t$, $y=t^2$ and $z=t^3$.		
Q.0	2 Solve: (12 Marks)		
a)	Solve differential equation using Laplace Transforms.	06	CO1
	$\frac{d^2y}{dt^2} + 4 \frac{dy}{dt} = -8 \text{ t}$ 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 .		W
b)	Write Fourier series for $f(x) = \sqrt{1 - \cos x}$ in $[0 \ 2\pi]$	06	CO2
	OR Write Fourier series for $f(x) = 2x - x^2$ in [0 3]		
		78	

CRITERION: 2.2.2, 3.2.2.

FILE NO: P25, P31



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	REV:00		QUESTION PAPER CLASS TEST 02	EXN	1-04 B	
CL	ASS:- SE			SEM:-III		
COI	URSE:CNCPG			DATE:- 24/10/	2018	
DU	RATION:- 60	min.		MARKS:- 20		
0.0	1 Attempt any t	wo: (08 Mark	s)		Marks	СО
a)	Explain Nuclear				4	CO4
b)	Explain the differ	ent types of hydr	o power plant.	- T	4	CO3
c)	Explain Francis tu	rbine used in hyd	lro power plant.		4	C03
Q.0	2 Attempt any o	one: (12 Marks	s)			
a)	Explain importa	nt factors govern	ed for selection of site of hydro power plant. Also state a	advantages & disadvantages of	12	C04
b)	Explain PWR rea	ctor used in Nuc	ear power plant.		12	C04
c)	State advantage	es and disadvar	stages of gas turbine power plant.		12	CO5
	FILE NO:			CRITERION:2.2.2,3.2	.2.	

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	REV:00	QUESTION PAPER CLASS TEST 02	EXM-04 B		
CL	ASS:- SE		SEM:III	-	
CO	URSE:-CNCPG		DATE:- /10/	2018	
DU.	DURATION:- 60 min. MARKS:- 20				
Q.0	1 Attempt any two	: (08 Marks)		Marks	СО
a)	Explain Nuclear fiss	on and fusion.		4	CO4
b) Explain the different types of hydro power plant.		4	CO3		
c)	Explain Francis turbin	e used in hydro power plant.		4	CO3
Q.02	2 Attempt any ONI	E: (12 Marks)	. 51		
a)	Explain important fa the plant.	actors governed for selection of site of hydro power plant. Also state a	dvantages & disadvantages of	12	CO4
b)		used in Nuclear power plant.		12	CO4
c)	State advantages a	nd disadvantages of gas turbine power plant.		12	CO5

FILE NO: P25, P31

CRITERION: 2.2.2, 3.2.2.

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REV:	OUESTION PAPER CLASS TEST 02		EXM-04 B	
CLASS:-	SE	SEM:-III		-
COURS	E:- EEM	DATE:- 2	4/10/18	
DURAT	DURATION:- 60 min. MARKS:- 2			
Q.01 A	tempt any ONE: (08 Marks)		Marks	СО
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 A	tempt any ONE: (12 Marks)	4 2		
a)	EXPLAIN CONSTRUCTION AND WORKING OF PMMC INSTRALSO DERIVE EQUATION FOR DEFLECTING TORQUIDEFLECTION 6. WHAT IS THE SHAPE OF THE SCALE.		12	CO1
	DESCRIBE CONSTRUCTION, WORKING PRINCIPLE, AND THE DYNAMOMETER TYPE WATTMETER	ORY OF	12	CO1

FILE NO:

P25, P31

CRITERION:

2.2.2, 3.2.2

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REV:00	QUESTION PAPER CLASS TEST 02		EXM-04 B	
CLASS:- SE	SE	M:-III		
COURSE:- EEM DATE:-				
DURATION:- 60 min. MARKS:- 2				
	pt any ONE: (08 Marks)		Marks	СО
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 Attem	ot any ONE: (12 Marks)			
ALS DEF	LECTION 6. WHAT IS THE SHAPE OF THE SCALE.	AND	12	CO1
b) DESCRIBE CONSTRUCTION, WORKING PRINCIPLE, AND THEORY OF DYNAMOMETER TYPE WATTMETER			12	CO1

CRITERION: 2.2.2, 3.2.2.

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]	REV:00	QUESTION PAPER CLASS TEST 02	XM-04 B	
CLA	ASS:- SE	SEM:-III		
COI	JRSE:-E.E.	TRICAL $\in \mathcal{O}$ DATE:-23/	0/2018	
DUI	RATION:-	60 min. MARKS:- 20		
0.0	1 Attemnt an	y two: (08 Marks)	Monks	CO.
a)		splain Barkhausen's criteria for sustained oscillations.	Marks 4	CO 6
				0
b)	Determine th and $V_P = -8V$	e operating point parameters V_{GSQ} , I_{DQ} and V_{DSQ} for the Fixed Bias circuit. Assume $I_{DSS}=8n$ V , $R_D=2$ k Ω , $R_G=1$ M Ω , $V_{DD}=16$ V and $V_{GG}=-2$ V.	A 4	4
c)	Explain the I	Effect of negative feedback on voltage gain, input impedance, output impedance, and bandwidt	1 4	5
2.02	Attempt an	y two: (12 Marks)		
a)	Analyse Vo	ltage Series Negative feedback Amplifier with respect to Input Resistance, Output Resistangain.	ce 6	5
b)	Explain Hart	tley 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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REV:00	QUESTION PAPER CLASS TEST 02	EXM-04 B	
CLASS:- SE	SEM:-III		
COURSE:-ELE	CIRICAL EDC DATE:-	10/2018	
DURATION:-	60 min. MARKS:- 2		
O.01 Attempt a	ny two: (08 Marks)		
		Marks	CO
2 September 2 Cited a for sustained oscillations.		4	6
b) Determine the operating point parameters V_{GSQ} , I_{DQ} and V_{DSQ} for the Fixed Bias circuit. Assume $I_{DSS} = 8mA$ and $V_P = -8V$, $R_D = 2 k\Omega$, $R_G = 1M\Omega$, $V_{DD} = 16V$ and $V_{GG} = -2V$.		mA 4	4
c) Explain the Effect of negative feedback on voltage gain, input impedance, output impedance, and bandwidth			5
2.02 Attempt ar	ny two: (12 Marks)		
and voltage		nce 6	5
Explain Ha	rtley 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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DEPARTMENT OF ELECTRICAL ENGINEERING REV:00 EXM-04 B **QUESTION PAPER CLASS TEST 02** CLASS:- SE COURSE:-EMC-1 DURATION:- 60 MIN. SEM:-III DATE:-25/10/13 Q.01 attempt any one: (08 marks) Mark Co C06 Explain the term step angle and stepping rate in stepper motor. Also determine the step angle of a 8 variable reluctance stepper motor with 12 teeth in stator and 8 rotor teeth. State the applications of stator motor C06 Explain construction and working the various types of stepper motor 8 Q.02 attempt any two: (12 marks) CO₅ Hopkinson's test on two shunt machines gave the following results at full load: line voltage 12 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. A 20HP 220V shunt motor takes a full load current of 82A, speed 1000 rpm, armature **CO4** 12 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



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	Rev:00	Question paper class test 02	Exm-04	ł b	
C	LASS:- SE CO	JRSE:-EMC-1 DURATION:- 60 MIN. SEM:-III MARKS:- 20	DATE:-		
Q	.01 attempt	any one: (08 marks)		Marks	Co
A		term step angle and stepping rate in stepper motor. Also determine uctance stepper motor with 12 teeth in stator and 8 rotor teeth. States		8	Co6
В	Explain con	struction and working the various types of stepper motor		8	Co6
Q	.02 attempt	any 😂: (12 marks) on e			
À	200V, line currents 4a machine is		ent 350A and field t resistance of each	12	CO 5
В	resistance (220V shunt motor takes a full load current of 82A, speed 1 0.1 ohm, shunt field resistances 110 ohm. It is to be braked must be placed in series to limit current to 120a? Find also que	by plugging. What	12	CO 4