



**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 CLASS TEST 01	EXM-04 B
CLASS:- SE		SEM:-IV
COURSE:- EN		DATE:- 16/2/19
DURATION:- 60 min.		MARKS:- 20
Q.01 Attempt any two: (08 Marks)		
a)	Write a short note on different types of sources.	Marks 4 CO 1
b)	Find the current i by using mesh analysis for the network shown below	Marks 4 CO 1
c)	Define a) oriented graph b) connected graph c) Tree d) co-tree	Marks 4 CO 2
Q.02 Attempt any two: (12 Marks)		
a)	Determine thevenin equivalent across a & b	Marks 6 CO 1
b)	Find the possible number of tree in a given graph	Marks 6 CO 2
c)	For the network shown below find I_1	Marks 6 CO 3

CRITERION : 2.2.2, 3.2.2.

FILE NO : P25, P31

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DEPARTMENT OF ELECTRICAL ENGINEERING

REV:00	DEPARTMENT OF ELECTRICAL ENGINEERING	EXM-04(a)
CLASS:- SE		SEM:- IV
SUBJECT:- EMC-II		DATE:-15/02/19
DURATION:- 1hr		MARKS:- 20
CLASS TEST 01		
Q.01 Attempt any TWO: (08 Marks)		Marks
1 .Explain phasor diagram of transformer on no load.		4
2 Derive condition for zero and max voltage regulation.		4
3 Explain polarity test on transformer.		4
Q.02 Attempt any TWO: (12 Marks)		CO
1 Explain separation of hysteresis and eddy current losses.		6
2 Explain construction of auto transformer also explain saving of copper.		6
3 Two transformer having same voltage regulation on no load in parallel to supply a load of 1000 kva at 0.8 pf lag. One transformer rated at 400kva and has a pu eq impedances of (0.01+0.06) other is rated at 600kva and has a pu eq impedance (0.01+j0.05)ohm .calculate load share by each transformer in kva and operating pf.		6



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REV:00	QUESTION PAPER CLASS TEST 01	EXM-04 B																	
CLASS:- <u>S.E EE</u>		SEM:- <u>IV</u>																	
COURSE:- <u>APPLIED MATHS-IV</u>		DATE:- <u>14/02/2019</u>																	
DURATION:- <u>1 HOUR</u>		MARKS:- <u>20</u>																	
Q.01 Attempt any two: (08 Marks)																			
a)	Obtain Spearman's rank correlation coefficient(R) from following data. <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td>X</td><td>10</td><td>12</td><td>18</td><td>18</td><td>15</td><td>40</td></tr> <tr> <td>Y</td><td>12</td><td>18</td><td>25</td><td>25</td><td>50</td><td>25</td></tr> </table>	X	10	12	18	18	15	40	Y	12	18	25	25	50	25	04	CO5		
X	10	12	18	18	15	40													
Y	12	18	25	25	50	25													
b)	Find the Extremal of the following Functional. $I = \int_0^\pi (y'^2 - y^2) dx$ given that when $x = 0, y = 0$ and when $x = \pi, y = 0$.	04	CO1																
c)	If $A = \begin{bmatrix} 2 & 3 \\ -3 & -4 \end{bmatrix}$ prove that $A^{100} = \begin{bmatrix} -299 & -300 \\ 300 & 301 \end{bmatrix}$	04	CO3																
Q.02 Attempt any two: (12 Marks)																			
a)	Find Eigen values and Eigen vectors for the matrix $A = \begin{pmatrix} 2 & -1 & 1 \\ 1 & 2 & -1 \\ 1 & -1 & 2 \end{pmatrix}$	06	CO3																
b)	Find the two lines of regression from the following data. <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <tr> <td>Marks in PHY (X)</td><td>36</td><td>32</td><td>34</td><td>31</td><td>32</td><td>32</td><td>34</td></tr> <tr> <td>Marks in CHEM (Y)</td><td>35</td><td>33</td><td>31</td><td>30</td><td>34</td><td>32</td><td>36</td></tr> </table> Estimate Y when $X = 38$. Estimate X when $Y = 40$	Marks in PHY (X)	36	32	34	31	32	32	34	Marks in CHEM (Y)	35	33	31	30	34	32	36	06	CO5
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Marks in CHEM (Y)	35	33	31	30	34	32	36												
c)	Determine the function that gives the shortest distance between two given points.	06	CO1																

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REV:00	QUESTION PAPER CLASS TEST 01/ 02	EXM-04 B
CLASS:- SE		SEM:- IV
COURSE:- Power Systems - I		DATE:- 14/2/19
DURATION:- 60 min.		MARKS:- 20
Q.01 Attempt any 2 : (08 Marks)		Marks CO
a)	Compare AC and DC supply systems	4 CO1
b)	Derive the expression for calculating sag. How can the effect of wind and Ice loadings be taken into account?	4 CO2
c)	What is Per Unit System? Mention its advantages.	4 CO3
Q.02 Attempt any 2 : (12 Marks)		
a)	A String insulators has 5 units is connected across a 100 kV line. If the capacitance of each disc to earth is 10% of the capacitance of the insulator, calculate i) the distribution of voltage on the insulator discs and ii) the String Efficiency.	6 CO2
b)	The towers of height 30m and 90m respectively support a transmission line conductor at water crossing. The horizontal distance between the towers is 500m. If the tension in conductor is 1600kg, find the minimum clearance of the conductor and water. Weight of conductor is 1.5kg/m. Bases of the towers can be considered at water level.	6 CO2
c)	With a neat Single Line Diagram explain general AC Power Supply Scheme.	6 CO1



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REV:00	QUESTION PAPER CLASS TEST 01	EXM-04 B
CLASS:-SE		SEM: IV
COURSE:- EFW		DATE:- 15//02 / 2019
DURATION:- 60 min.		MARKS:- 20
Q.01 Attempt any Two : (08 Marks)		Marks CO
a)	State and explain Coulombs law in Electrostatics.Hence define unit charge.	4 CO2
b)	A point charge Q1 = 2 milli coulomb is located in free space at p1(-3,7,-4) while Q2=5 mc at P2(2,4,-1). Find force F2 & F1..	4 CO2
c)	Discuss the various practical application of Electrostatic field	4 CO1
Q.02 Attempt any One: (12 Marks)		
a)	Transform given vector \vec{A} into cylindrical coordinate system, $\vec{A} = y \vec{a}_x + x \vec{a}_y + \frac{x^2}{\sqrt{x^2+y^2}} \vec{a}_z$	12 CO1
B)	If Irrational field $\nabla \times \vec{v} = 0$ Find constant a,b,c so that is irrotational. $\vec{V} = (x+2y+az) \vec{a}_x + (bx-3y-z) \vec{a}_y + (4x+(y+2z)) \vec{a}_z$	12 CO2
C)	Find the electric field intensity at point p(1,1,1) caused by four identical 3 nano coulomb point charges located p1(1,1,0),p2(-1,1,0),p3(-1,-1,0), p4(1,-1,0)	12 CO2



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