



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	DEPARTMENT OF ELECTRICAL ENGINEERING	EXM-04(a)
CLASS:- SE		SEM:- IV
SUBJECT:- Power System-1		DATE: 27/02/2018
DURATION:- 1 Hr		MARKS:- 20
<b>CLASS TEST 01</b>		
<b>Q.01 Attempt any TWO: (5 Marks each)</b>		<b>Marks CO</b>
1	What are advantages and disadvantages of DC transmission system over AC transmission system.	5 1
2	Define sag. And draw single line diagram of AC power system	5 2
3	Why are insulators used with overhead line? What are the advantages of pin type and suspension type insulator?	5 1
<b>Q.01 Attempt any ONE: ( 10 Marks )</b>		
1	Derive an approximate expression for sag in overhead line with towers at different levels.	10 2
2	Define and explain string efficiency. What are different methods to improve it?	10 2

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REV:00

**DEPARTMENT OF ELECTRICAL ENGINEERING**

EXM-04(a)

CLASS:- SE

SEM:- IV

SUBJECT:- AM IV

DATE:- 27/02/18

DURATION:- 1hr

MARKS:- 20

**CLASS TEST 01****Q.01 Attempt any TWO: (10 Marks)**

	Marks	CO
1 If $A = \begin{bmatrix} 3 & 1 & -1 \\ 2 & 2 & -1 \\ 2 & 2 & 0 \end{bmatrix}$ , find the characteristic roots and characteristic vectors of $A^2$	5	CO2
2 Verify Cayley-Hamilton Theorem for $A = \begin{bmatrix} 1 & 2 \\ 3 & 4 \end{bmatrix}$ and hence find $A^{-1}$ and $A^3 - 5A^2$	5	CO2
3 If $A = \begin{bmatrix} 3 & -4 \\ 1 & -1 \end{bmatrix}$ , find $A^{100}$	5	CO2

**Q.02 Attempt any TWO: (10 Marks)**

1 Find the extremal of $\int_{x_1}^{x_2} y\sqrt{1+y'^2} dx$	5	CO1
2 Find the curve $y = f(x)$ for which $\int_{x_1}^{x_2} y\sqrt{1+y'^2} dx$ is minimum subject to the constraint $\int_{x_1}^{x_2} \sqrt{1+y'^2} dx = \ell$	5	CO1
3 Using Rayleigh-Ritz method, find an approximate solution for the extremals of $\int_0^1 (y'^2 - 2y - 2xy) dx$ with $y(0) = 2, y(1) = 1$	5	CO1

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EXM-04(a)

REV:00

CLASS:- SE

SUBJECT:- EFW

DURATION:- 1hr

SEM:- IV

DATE:- 28/2/18

MARKS:- 20

CLASS TEST 01

Q.01 Attempt any TWO: (10 Marks)

- |   | Marks | CO  |
|---|-------|-----|
| A Express the vector $\vec{A}$ in cartesian coordinate system if $\vec{A} = 2\cos\theta\vec{a}_r + 2r\vec{a}_\theta - 4a\vec{\phi}$ | 5     | CO1 |
| B Transform vector field $\vec{F}$ into cylindrical coordinate system if $\vec{F} = 10ax - 8ay + 6az$ at point (10,-8,6)            | 5     | CO2 |
| C State and explain Divergence theorem.   | 5     | CO2 |

Q.02 Attempt any TWO: (10 Marks)

- |   |   |     |
|---|---|-----|
| A Three equal point charges of $2\mu C$ are located in free space at (0,0,0), (2,0,0), & (0,2,0) respectively. Find net force on the fourth charge of $5\mu C$ at (2,2,0) | 5 | CO2 |
| B Find the electric field intensity at point P(1,1,1) caused by four identical point charges located at p1(1,0), p2(-1,1,0), p3(-1,-1,0) & p4(1,-1,0)                     | 5 | CO2 |
| C Calculate the divergence of field at the point indicated P(1,2,3)<br>If $\vec{D} = 4x^3y^3z^2ax + 3x^4y^2z^2ay + 2x^4y^3zaz$  | 5 | CO2 |





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EXM-04(a)

REV:00

CLASS:- SE

SEM:- IV

SUBJECT:- EMC-II

DATE:- 28 /02/18

DURATION:- 1hr

MARKS:- 20

CLASS TEST 01

**Q.01 Attempt any TWO: (08 Marks)**

	Marks	CO
1 Derive EMF equation of transformer.	4	CO 1
2 Define voltage regulation and derive condition for zero and max voltage regulation.	4	CO 1
3 Explain polarity test on transformer.	4	CO 1

**Q.02 Attempt any TWO: (12 Marks)**

1 Explain separation of hysteresis and eddy current losses.	6	CO 1
2 Explain with neat diagram sumppner test on two identical transformer.	6	CO 1
3 Two transformer shares a load of 400kva at 0.8 pf lag. Their eq impedances ref to sec are (1+j2.5)and (1.5+j3)ohm respectively. calculate load share by each transformer.	6	CO 1



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REV:00	DEPARTMENT OF ELECTRICAL ENGINEERING	EXM-04(a)
CLASS:- SE	SEM:- III	02
SUBJECT:- ADIC	DATE:- 01/10/18	
DURATION:- 1hr	MARKS:- 20	
<b>CLASS TEST 01</b>		
<b>Q.01 Attempt any TWO: (10 Marks)</b>		
1	Draw and Explain block diagram of Op-amp.	Marks 5 CO1
2	Explain Slew rate and CMRR.	5 CO1
3	Explain virtual short concept and virtual ground concept.	5 CO2
<b>Q.02 Attempt any ONE: (10 Marks)</b>		
1	Explain Integrator using op-amp. Also explain Practical Integrator.	10 CO2
2	Explain Instrumentation Amplifier with an application.	10 CO2

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CLASS:- SE	SEM:-IV
SUBJECT:-EN	DATE:- 01/3/18
DURATION:- 1 Hr	MARKS:- 20

**CLASS TEST 01**

Q.01 Attempt any ONE: (10 Marks)		Marks	CO
a	Find $I_A$ and $I_B$ by using mesh analysis. 	10	CO1
b	Find voltage $V_x$ by using nodal analysis. 	5	CO1
Q.02 Attempt any ONE: (10 Marks)		Marks	CO
a	Find the current $I_x$ by using superposition theorem. 	10	CO1
b	Find Thevenin's equivalent. 	10	CO1