

Sem V

ANJUMAN-I-ISLAM'S  
KALSEKAR TECHNICAL CAMPUS, NEW PANVEL  
School of Engineering & Technology

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Subject: CE  
Date: 31/9/16  
Class: Third Year

Marks: 20  
Duration: 1Hr  
Branch: Electrical

**Q.1 Solve any two out of three (4 marks each)**

- (a) Explain how Power and Bandwidth saving is achieved using SSB system.
- (b) Explain need for modulation.
- (c) Derive AM wave Equation.

**Q.2 Solve any two out of three (6 marks each)**

- (a) Explain a method for generation of DSB-SC signal.
- (b) Explain a method for generation of SSB signal.
- (c) Explain with neat diagram the Armstrong method of FM generation.



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Subject: M/C II

Marks: 20

113/16

Class: T.E

Branch: Electrical Engineering

Solve any two

[7 marks each]

Q1] Explain inrush phenomenon in transformer and explain why the magnetizing current is non sinusoidal in nature

Q2] What is a 3 phase transformer bank and 3 phase transformer unit . What are the advantages of single 3 phase transformer unit over 3 single phase units of same KVA rating.

Q3] Draw and explain scott connection in detail

Solve any one

[6 marks each]

Q1] A 500 KVA transformer with 0.01 pu resistance and 0.05 pu reactance is connected in parallel with a 250 KVA transformer with 0.015 pu resistance and 0.04 pu reactance. the reactance voltage of each transformer is 400v on no load. Find how they share a load of 750 KVA at power factor 0.8 lagging.

Q2] what is meant by three phase transformer groups? Explain their significance. Explain what is Dd0 Dd1 Yy0 Yy1 Dy3 Yd4 and draw Yd4



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Subject: PSGE

OT I

Marks: 20

Class: T.E

1/9/16

Branch: Electrical Engineering

Question number 1 is compulsory, answer any two in remaining

1. Write a note on Contactors. [6M]
2. Explain working principle of Air Circuit Breaker. [7M]
3. Explain 'arc quenching techniques in CB. [7M]
4. With Neat diagram explain principle of Induction Disc Relay. [7M]



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Subject: PSGE

Marks: 20

Class: T.E

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**Unit Test- I**

**Subject: Electromagnetic field and Wave**  
**Marks: 20**  
**Class: Third Year**

**Date: 2/9/16**  
**Duration: 1 hr**  
**Branch: EE**

Q 1. SOLVE ANY FOUR QUESTIONS. (5 × 4 = 20 Marks)

a) Given the general vector  $\vec{A} = 2 \frac{\cos \theta}{r^3} \vec{ar} + \frac{\sin \theta}{r^3} \vec{a\theta}$

Show that CURL of  $\vec{A}$  is everywhere Zero.

b)  $\vec{A} = (2y + a z) \vec{ax} + (b x - z) \vec{ay} + (4x + 6y) \vec{az}$  Prove that  $\vec{A}$  is solenoid. If  $\vec{A}$  is also irrotational, Find out the value of constant a, b, c.

c) Use cylindrical coordinate system to find the area of curved surface of right circular cylinder where  $r = 2$  m,  $h = 5$  m,  $30^\circ \leq \Phi \leq 120^\circ$

d) State and explain coulomb's law. A point charge  $Q_1 = 2$  mc is located in free space at  $P_1(-3,7,-4)$  while  $Q_2 = 5$  mc is at  $P_2(2,4,-1)$ . Find vector force on charge  $Q_2$  and  $Q_1$ .

e) Find the electric field intensity  $\vec{E}$  at point  $P(1,1,1)$  caused by four identical 3 nc point charges located at  $P_1(1,1,0)$ ,  $P_2(-1,1,0)$ ,  $P_3(-1,-1,0)$ ,  $P_4(1,-1,0)$

f) A uniform line charge  $\rho_L = 25$  nc/m lies on the line  $x = -3, Z = 4$  in free space. Find vector  $\vec{E}$  in Cartesian component a) at origin b) at  $(2,15,3)$

\*\*\*\*\*BEST OF LUCK\*\*\*\*\*



Sam V

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Subject: POWER ELECTRONICS  
Marks: 20  
Class: Third Year

Date: 2/9/16  
Duration: 1 hr  
Branch: EE

Q1. SOLVE ANY FOUR OUT OF FIVE.

[20 MARKS]

- 1) Explain, DIAC, TRIAC and two transistor model.
- 2) Explain IGBT with its asymmetric and symmetric nature.
- 3) Explain class C commutation.
- 4) Explain Dynamic turn on and turn off characteristic of SCR.
- 5) Explain full wave converter with bridge configuration.

\*\*\*\*\*BEST OF LUCK\*\*\*\*\*