



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

Subject: PSGE
Marks: 20
Class: Third Year

UT:II
Duration: 1 hr
Branch: EE

QUESTION NUMBER 1 IS COMPULSARY ANSWER ANY ONE IN REMAINING 2.

- 1) Explain working of Buchholz relay showing its location and justify why it can't be used in dry transformer. Also mention advantages and Limitations. [10M] [CO4]
 - 2) Explain three step protection provided for transmission line. [10M][CO5]
 - 3) Explain differential protection provided for different types of bus zones. [10M] [CO5]
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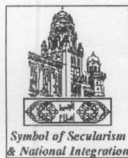
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Subject: electrical machine 2
Marks: 20
Class: Third Year

Date:
Duration: 1 hr
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Q 1. SOLVE ANY **TWO** OUT OF FOUR. [20 MARKS]

- 1] Explain principle operation of 3 phase induction motor [CO1]
- 2] Explain double revolving field theory and draw torque speed curve of 1 phase I.M. [CO1]
- 3] why starters are necessary for starting 3 phase I.M. and describe DOL starter and auto X'mer starter. [CO2]
- 4] Discuss briefly various methods of speed control of I.M. [CO5]



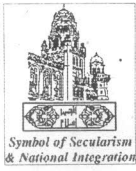
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ANJUMAN-I-ISLAM'S
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Unit Test- II

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

Date:
Duration: 1 hr
Branch: EE

NOTE :- SOLVE ANY TWO QUESTIONS . Marks (10 × 2 = 20)

Q.1) Explain Biot Savart's Law in magnetic fields.

Q.2) Derive the Poission's and Laplace equation and Determine whether the following
Potential Field satisfy Laplace equation or not?

$$V = r \sin \Phi + Z.$$

Q.3) State the Maxwell's equations for time varying fields in integral and point form and
Show that following field vectors in free space,

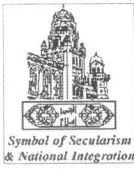
$$\vec{E} = E_0 \cos(\omega t - \beta z) \vec{a}_x$$

$$\vec{H} = E_0/n \cos(\omega t - \beta z) \vec{a}_y$$

Can satisfy all Maxwell's equation or not?

Q.4) A Current sheet $\vec{K} = 10 \vec{a}_z$ A/m lies in $x = 4$ m plane and a second current sheet $\vec{K} = -8\vec{a}_z$
A/m lies at $x = 5$ m plane .Find \vec{H} at point P (1, 1, 1)

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



**ANJUMAN-I-ISLAM'S
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Subject: POWER ELECTRONICS
Marks: 20
Class: Third Year

Date:
Duration: 1 hr
Branch: EE

Q1. SOLVE ANY TWO OUT OF THREE. [10 MARKS]

- 1) Explain 1 phase full bridge inverter with R-L load . [CO3]
- 2) Explain 3 phase full converter with continuous mode with R load . [CO3]
- 3) Explain matrix converter. [CO5]

Q2. SOLVE ANY ONE OUT OF TWO. [10 MARKS]

- 1) Explain 3 phase inverter with 120 degree mode. [CO3]
- 2) Explain SMPS , BOOST and Buck regulator. [CO4]

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Marks: 20
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