Code No: RR222104 | RR | SET-1

B.Tech II Year - II Semester Examinations, April/May-2012
ELECTRICAL AND ELECTRONICS ENGINEERING
(AERONAUTICAL ENGINEERING)

Time: 3 hours **Max. Marks: 80**

Answer any five questions
All questions carry equal marks

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1.a) Explain the principle of generation of sinusoidally alternating volatges.
b) Derive expression for power in three phase system. [8+8]

2.a) Currents through three parallel connected impedances are $i_1(t) = 300\ Sin(\omega t+30^0)$, $i_2(t) = 200\ Sin(\omega t+120^0)$ and $i_3(t) = 175\ Cos(\omega t+45^0)$. Determine the total current. Also draw the phsor diagram.
b) What are the different types of generators? Explain indetail. [8+8]

3.a) Derive expression for torque equation of D.C. Motor.
b) A 4 pole DC generator with a shunt field resistance of 100 Ω and armature resistance of 1 Ω has 378 wave connected conductors in its armature. The flux per pole is 0.02 Wb. If a load resistance of 10 Ω is connected across the armature terminals and the generator is driven at 100 rpm, calculate the power absorbed by the load. [6+10]

4.a) Derive E.M.F. equation of single phase transformer.
b) Explain the principle of operation of three phase induction motor. [8+8]

5.a) With the help of circuit diagram, explain the procedure of conducting open circuit test on single phase transformer.
b) Explain the procedure of determining voltage regulation of alternator. [8+8]

6. A 200/440 V, 50 Hz, 1-phase transformer on test gave the following results:
O.C. Test (L.V. Side): 20 V, 0.75 A, 80 W
S.C. Test (H.V. Side): 20 V, 12 A, 100 W. Find voltage regulation and efficiency at 0.8 p.f. lagging and full load. [16]

7.a) With the help of circuit diagram explain the procedure of obtaining V-I characteristics of P-N Junction diode.
b) With an example, explain intrinsic and extrinsic semiconductors. [8+8]

8. Write short notes on the following:
a) Zener diode
b) BJT
c) Applications of CRO. [5+5+6]

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Code No: RR222104 | RR | SET-2

B.Tech II Year - II Semester Examinations, April/May-2012
ELECTRICAL AND ELECTRONICS ENGINEERING
(AERONAUTICAL ENGINEERING)

Time: 3 hours **Max. Marks: 80**

Answer any five questions
All questions carry equal marks

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1.a) Derive expression for torque equation of D.C. Motor.
b) A 4 pole DC generator with a shunt field resistance of 100 Ω and armature resistance of 1 Ω has 378 wave connected conductors in its armature. The flux per pole is 0.02 Wb. If a load resistance of 10 Ω is connected across the armature terminals and the generator is driven at 100 rpm, calculate the power absorbed by the load. [6+10]

2.a) Derive E.M.F. equation of single phase transformer.
b) Explain the principle of operation of three phase induction motor. [8+8]

3.a) With the help of circuit diagram, explain the procedure of conducting open circuit test on single phase transformer.
b) Explain the procedure of determining voltage regulation of alternator. [8+8]

4. A 200/440 V, 50 Hz, 1-phase transformer on test gave the following results:
O.C. Test (L.V. Side): 20 V, 0.75 A, 80 W
S.C. Test (H.V. Side): 20 V, 12 A, 100 W. Find voltage regulation and efficiency at 0.8 p.f. lagging and full load. [16]

5.a) With the help of circuit diagram explain the procedure of obtaining V-I characteristics of P-N Junction diode.
b) With an example, explain intrinsic and extrinsic semiconductors. [8+8]

6. Write short notes on the following:
a) Zener diode
b) BJT
c) Applications of CRO. [5+5+6]

7.a) Explain the principle of generation of sinusoidally alternating volatges.
b) Derive expression for power in three phase system. [8+8]

8.a) Currents through three parallel connected impedances are $i_1(t) = 300\ Sin(\omega t+30^0)$, $i_2(t) = 200\ Sin(\omega t+120^0)$ and $i_3(t) = 175\ Cos(\omega t+45^0)$. Determine the total current. Also draw the phsor diagram.
b) What are the different types of generators? Explain indetail. [8+8]

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Code No: RR222104 | RR | SET-3

B.Tech II Year - II Semester Examinations, April/May-2012
ELECTRICAL AND ELECTRONICS ENGINEERING
(AERONAUTICAL ENGINEERING)

Time: 3 hours **Max. Marks: 80**

Answer any five questions
All questions carry equal marks

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1.a) With the help of circuit diagram, explain the procedure of conducting open circuit test on single phase transformer.
b) Explain the procedure of determining voltage regulation of alternator. [8+8]

2. A 200/440 V, 50 Hz, 1-phase transformer on test gave the following results:
O.C. Test (L.V. Side): 20 V, 0.75 A, 80 W
S.C. Test (H.V. Side): 20 V, 12 A, 100 W. Find voltage regulation and efficiency at 0.8 p.f. lagging and full load. [16]

3.a) With the help of circuit diagram explain the procedure of obtaining V-I characteristics of P-N Junction diode.
b) With an example, explain intrinsic and extrinsic semiconductors. [8+8]

4. Write short notes on the following:
a) Zener diode
b) BJT
c) Applications of CRO. [5+5+6]

5.a) Explain the principle of generation of sinusoidally alternating volatges.
b) Derive expression for power in three phase system. [8+8]

6.a) Currents through three parallel connected impedances are $i_1(t) = 300\ \mathrm{Sin}(\omega t+30^0)$, $i_2(t) = 200\ \mathrm{Sin}(\omega t+120^0)$ and $i_3(t) = 175\ \mathrm{Cos}(\omega t+45^0)$. Determine the total current. Also draw the phsor diagram.
b) What are the different types of generators? Explain indetail. [8+8]

7.a) Derive expression for torque equation of D.C. Motor.
b) A 4 pole DC generator with a shunt field resistance of 100 Ω and armature resistance of 1 Ω has 378 wave connected conductors in its armature. The flux per pole is 0.02 Wb. If a load resistance of 10 Ω is connected across the armature terminals and the generator is driven at 100 rpm, calculate the power absorbed by the load. [6+10]

8.a) Derive E.M.F. equation of single phase transformer.
b) Explain the principle of operation of three phase induction motor. [8+8]

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Code No: RR222104 | RR | SET-4

B.Tech II Year - II Semester Examinations, April/May-2012
ELECTRICAL AND ELECTRONICS ENGINEERING
(AERONAUTICAL ENGINEERING)

Time: 3 hours **Max. Marks: 80**

Answer any five questions
All questions carry equal marks

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1.a) With the help of circuit diagram explain the procedure of obtaining V-I characteristics of P-N Junction diode.
b) With an example, explain intrinsic and extrinsic semiconductors. [8+8]

2. Write short notes on the following:
a) Zener diode
b) BJT
c) Applications of CRO. [5+5+6]

3.a) Explain the principle of generation of sinusoidally alternating volatges.
b) Derive expression for power in three phase system. [8+8]

4.a) Currents through three parallel connected impedances are $i_1(t) = 300\ Sin(\omega t+30^0)$, $i_2(t) = 200\ Sin(\omega t+120^0)$ and $i_3(t) = 175\ Cos(\omega t+45^0)$. Determine the total current. Also draw the phsor diagram.
b) What are the different types of generators? Explain indetail. [8+8]

5.a) Derive expression for torque equation of D.C. Motor.
b) A 4 pole DC generator with a shunt field resistance of 100 Ω and armature resistance of 1 Ω has 378 wave connected conductors in its armature. The flux per pole is 0.02 Wb. If a load resistance of 10 Ω is connected across the armature terminals and the generator is driven at 100 rpm, calculate the power absorbed by the load. [6+10]

6.a) Derive E.M.F. equation of single phase transformer.
b) Explain the principle of operation of three phase induction motor. [8+8]

7.a) With the help of circuit diagram, explain the procedure of conducting open circuit test on single phase transformer.
b) Explain the procedure of determining voltage regulation of alternator. [8+8]

8. A 200/440 V, 50 Hz, 1-phase transformer on test gave the following results:
O.C. Test (L.V. Side): 20 V, 0.75 A, 80 W
S.C. Test (H.V. Side): 20 V, 12 A, 100 W. Find voltage regulation and efficiency at 0.8 p.f. lagging and full load. [16]

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