(4)

Unit-III / FkeâF~III   7½

6. Write short notes on the following :

(i) Step up chopper operation

(ii) Step down chopper operation

efvecve hej meb#ehle veeš efueekeÙes :

(i) meeÌlejece DeJe�je©Sekeâ keâe GÙÙeÙeve ÙeÛeeuueve

(ii) meeÌlejece DeJeÚje©Sekeâ keâe DeJeveceve ÙeÛeeuueve

7. What is a saturable reactor ? How it can be converted into magnetic amplifier ? Give the circuit of a magnetic amplifier and explain its working.

meÙÙeUe© efjÛkeešj keôlee nŠlee nw? Fmes ÛegyekeâÙÙe ÙeÜJeOeketâ cellkeâime yeoue mekeâÛes nÐ? Skeâ ÛegyekeâÙÙe ÙeÜJeOeketâ keâe fjheLe KeebÙÙeUes Deej Fmekeâe© keâÙeÙe&efÙeOe mecePeeFÙes-

Unit-IV / FkeâF~IV   7½

8. Draw circuits for single phase half bridge and ful bridge invertor circuit. Compare the performance of both the circuits.

Skeâue keâauee Deae efnÌleÙÙDeÙÙ heCe&meÙÙDeÙÙ Dev leJeleeakeâe heefjheLe KeebÙÙUes oesveeÙUheefjheLeeÙekeâ keâeÙÙe&keâer legÙevee keâÙÙheÙÙes-

9. Discuss the workign of ac static switch in detail. How devices are protected in power electronics?

AC efnLej efnJeÙÙeeUwkeâer keâeâÙÙe&efOeOe efÙemÙÙej mes mecePeeFÙes- heeÙej FuekeôÏÛejeefvekeâe cellef[ÙeeFmese keâes kesâimes megje#ele ekeâeÙee peelee nŠ?

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Roll No. _____

S-615

B.Sc.(Part-II) Examination, 2015
ELECTRONICS
Paper - III
(Industrial & Power Electronics)

Time Allowed : Three Hours]   *[Maximum Marks : 50*

Note : Answer five questions in all. Question No. 1 is compulsory. Attempt one question from each unit.

keâgue heeБle ÙeÙaveeÙÙkeâe GÙej oeefpeS~ ÙeÙÙve meb 1 DeefveÙeÙÙeÙ&nw~ ÙelÙÙekeâe FkeââF~mes Skeâ ÙeÙÙve keâaefpeS~

1. Write short answer of the following :

efvecve keâe meb#ehle GÙej efueekeÙeS :   2×10=20

(i) What do you understand by controlled rectifier?

efveÙÙef$Çle jŠkeäšeefvekeâÙeÙme&mes Dealne keâÙee mecePe nÐ?

(ii) Draw V-I characteristic curve of Thyristor.

LeeFeFjmšj keâe V-I DeaDyeuee#eefCekeâe JeÛkeâ KeebÙÙUes-

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(4)

Unit-III / FkeâF~III   7½

6. Write short notes on the following :

(i) Step up chopper operation

(ii) Step down chopper operation

efvecve hej meb#ehle veeš efueekeÙes :

(i) meeÌlejece DeJeÚje©Sekeâ keâe GÙÙeÙeve ÙeÛeeuueve

(ii) meeÌlejece DeJeÚje©Sekeâ keâe DeJeveceve ÙeÛeeuueve

7. What is a saturable reactor ? How it can be converted into magnetic amplifier ? Give the circuit of a magnetic amplifier and explain its working.

Unit-IV / FkeâF~IV   7½

8. Draw circuits for single phase half bridge and ful bridge invertor circuit. Compare the performance of both the circuits.

9. Discuss the workign of ac static switch in detail. How devices are protected in power electronics?

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(iii) What is a Diac?

[eÙkeâ keÙee neÙee nw?

(iv) What is a snubber circuit?

mveyej heefjheLe keÙee nelee nÖ?

(v) What do you understand by constant fre-quency chopper operation?

meefle jeeceer DeJej peÙekeâ keâ efveÙele DeeJeeÌe ØeefheâÜee mes Deehe keÙee mecePeÜes nÓ?

(vi) Name few solid state devices.

keâjÚ "eme DeJemLee ef[JeeFmeme keâ veeee yeleeÙeW

(vii) What are the advantages of static switches over mechanical?

efmLej efmJeÙeeWkeâ Ûeefv$ekeâ efmJeÙeeWkeâer Dehe#ee keÙee heâeÙeeÓ? nÓ?

(viii) Define 'Quiescent Current' of Magnetic Amplifiers.

ÛegyekeâdÙe ÛeJeÙekeâe keâer 'Meev Oeej e' keâesheej Yeefvle keâeÙepeÙeW

(ix) Name performance parameters of invertors?

DevJeJeleea keâ ef-heeove ÛeÙeeue keâ veece fueKeW

(x) What do you understand by pulse width modulation in reference to invertors?

DevJeJeleeakeâ mecyevOe ceÙelmhebb keââveeceJeee efveÙebÛe meskeÙee mecePeÜes nÓ?

Unit-I / FkeâeF-I   7½

2. Define various performance parameters of a rectifier. What is the significance of form fac-tor and harmonic factor?

eb° keâejer keâ efveeÙeVe efve-heeove ÛeeÙeueeeÙWkeâer heefj Yee-ee oefheeÙes 'Deekeâefle leÅkeâe' DeeÙe nejceesvekeâ leÅkeâe keÙee oMeeÜee nÖ?

3. Define "turn on" and "turn off " thyristor. Explain in brief few methods to 'turn on' and 'turn off' Thyristor .

LeeFefjmšj keâ 'DeejcYe meceÙe' DeeÙe 'efveDeeÙeve meceÙe' keâerheefj Yee-ee oefheeÙes LeeFefjmšj keâes 'DeejcYe' DeeÙe 'Deekeâe' keââjves keâ keâjÚ lejkeâeÙÙkeâes mebleÿehle mecePeeFÙes

Unit-II / FkeâeF-II   7½

4. Explain the principle of 'on-off' and phase angle control in AC voltage controller. Derive the ex-pression for RMS output voltage and RMS out-put current.

'AC JeesušeÜpe efveÙebÙekeââÙeeWkeÙÙÛeeuet yeÜo' DeeÙe 'keâeÙee keâeÛe efveÙebÙeCe' keâ efmeÉevle keâes mecePeeFÙes RMS efveie&le JeesušeÜpe DeeÙe RMS efveie&le Oeeje keâ JÙebpekeâ keâer ieCevee keâeÙeefhÙes

5. Explain the working of a single phase full con-vertor with RL load.

RL Yeej JeeuesSkeâue keâeuee heÜCeÙetleÙÙekeâe keâer feâYee keâesmecePeeFÙes