keâ keâeceš eš Je, Smeeeme Se š Je leLee e[mš eJÙeeš Je eveÙecee keâe ØekeâLeve keâeepeS leLee Fvn emeæ keâeepeS~

(b) Simplify the Boolean expressions:
yeeueÙeve JÙepekeâe keâe mejue keâeepeS:

(i) $A+\overline{B}C\ (A+\overline{\overline{B}C})$

(ii) $(A+\overline{A}B)(A+B)(\overline{A}+\overline{B})$

7. Reduce using K-Maps and implement in NAND or NOR logic:
K-cehe keâe ØeÙeeie keâjle nS meceeveÙeve keâeepeS SJe NAND DeLeJee NOR lekeâ ce ueeie keâeepeS~

(i) Y = Em (0,1,5,8,9,10,12,13,14)

(ii) Y = TTM (1,2,3,7)

(iii) Y = Em (1,2,3,4,9,10,11,12)

(iv) Y = TTM (1,3,5,7,9,11,13,15)

Unit-IV / FkeâeF-IV 7½

8. Explain The working of a multimeter by a labelled diagram.
ceuše ceešj keâe keâeÙeØeCeeuee keâe Skeâ meJÙeJeemLele jKeeeÛe$e Éeje mecePeeFS~

9. Explain the principle and construction of a cathode ray oscilloscope. Draw a well-labelled diagram for the same.
keâLee[j Deeemeueemkeâehe keâ emeæevle SJe âeÙeØeCeeuee keâe mecePeeFS~ Gmekeâe meJÙeJeemLele jKeeeÛe$e Yee yeveeFÙe~

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Roll No. _____

S-611

B.Sc. (Part-I) Examination, 2015

ELECTRONICS

Second Paper

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

Note : Answer five questions in all Question No.1 is compulsory. Attempt one question from each Unit.
keâue heeÛe ØeMvee keâ Gòej oeepeS~ ØeMve me.1 DeeveJeeÙe n~ ØelÙekeâ FkeâeF me Skeâ ØeMve keâeepeS~

1. Answer all the following : 2×10=20
evecveeueeKele meYee keâ Gòej oeepeS :

(i) Define Gray Code
«e keâe[heejYeee<ele keâeepeS~

(ii) Convert decimal number 1426.25 to binary number.
[emeceue Dekeâ 1426.25 keâe yeeFvejе Dekeâ ce heejJeelele keâeepeS~

(iii) Define Minterm.
ecevšce keâe heejYeee<ele keâeepeS~

(iv) Convert octal number 257 to decimal number
DeekeŠue Dekeâ 257 keâe [emeceue Dekeâ ce heejJeelele keâeepeS~

(v) Explain seven segment decoder
meJeve meiecevŠ e[keâe[j keâe mecePeeFS~

(vi) Draw the logic circuit diagram of
$y = (A+B).\overline{C}$
$y = (A+B).\overline{C}$ keâe lekeâ heejheLe yeveeFS~

(vii) Define Parity
heejŠe keâe heejYeee<ele keâeepeS

(viii) What is power supply?
heeJej mehueeF keÙee nelee n?

(ix) Give two application of a C.R.O
mee.Deej.Dee keâ oe GheÙeeie oeepeS~

(x) What is synchronization?
emev›eâeveeFpeMeve keÙee nelee n?

Unit-I / FkeâeF-I 7½

2. Explain why binary numbers are used in logic circuit. Describe the method of converting from binary to decimal and decimal to binary.
mecePeeFÙe ekeâ lekeâ-heejheLee ce yeeFvejle Dekeâe keâe ØeÙeeie keÙee ekeâÙee peelee n? yeeFvejle me [emeceue SJe [emeceue me yeeFvejle ce heejJeelele keâjve keâe eJeeOe keâe JeeCele keâeepeS~

3. What are weighted BCD codes and non-weighted codes? Discuss in details sequential and reflective codes.

JeŠ[yee mee [e keâe[me leLee veeve JeŠ[keâe[me keÙee nele n?
emekeJeeMeÙeue SJe jheueekeŠJe keâe[e keâe eJemlele ÛeÛee keâeepeS~

Unit-II / FkeâeF-II 7½

4. What is OR gate? Discuss its logic operation write truth table for three input OR gate. Design OR gate using diodes. Explain the difference between OR gate and AND gate.
OR ieŠ keÙee nelee n? Fmekeâ lekeâ DeehejMeve keâe ÛeÛee keâeepeS~ leeve FveheŠ OR ieŠ keâe melÙeceeve meejCee eueeKeS~ [eÙee[me keâe ØeÙeeie keâj OR ieŠ keâe jÛevee keâeepeS~ OR ieŠ SJe AND ieŠ ce Devlej mecePeeFS~

5. (a) What is the difference between XOR and XNOR gate? Explain the operation of XNOR gate with the help of its logic circuit.
XOR SJe XNOR ieŠe ce Devlej keÙee nele n? XNOR ieŠ keâe ØeÛeeueve GmekeâlekeâheejheLe keâe meneÙelee me mecePeeFS~

(b) Explain the operation of NAND gate and show that it is a Universal gate.
NAND ieŠ keâe ØeÛeeueve mecePeeFS Deej Ùen oMeeFÙe ekeâ NAND ieŠ keâe meeJekeâ ieŠ n~

Unit-III / FkeâeF-III 7½

6. (a) State and prove the Commutative, associative and distributive laws of Boolean Alegbra with logic design.
ueeepekeâ e[peeFve keâe GheÙeeie keâjle nS yeeueÙeve Supeyeje