

(4)

DemŠyegre ceesreemŠyegre SJebyeeFmŠyegre yeryhgaachešeeWcellkellbe DevLej
nedee nŕ yeeFmŠyegre yeryhgaacheše kaē ōUeeueve n oMeeŕes cel
mecePeeFS ekeā Fmekeāer oesveellVDeJemLeeSB mLeeUeer nedeer nŕ R.S.
Gueš-heueš kaē ōUeeueve kaē JeCete keāeppeS~

- 7. (a) Describe the construction and working of schmidtt trigger with the help of its circuit.
eŕŕceš ešŕej kaēer meŕj ōvee SJebyeeFmŠyegre yeryhgaacheše Gmekeā heŕj heLe kaēer
merneŕeŕee mes mecePeeFS~
- (b) Explain the operation of a J.K. flip-flop with the help of its logic circuit and truth table.
J.K. Gueš-heueš kaē ōUeeueve Gmekeā ũkeā-heŕj heLe SJe
mel ōveeueve meŕj Ceer kaēer merneŕeŕee mes mecePeeFS~

Unit-IV/FkeāF-IV 7½

- 8. Explain the modules of a counter. What do you understand by feed back in a Counter?
Explain the operation of Mod-5 parallel counter with the help of its waveforms.
ieeCeše kaē ceepŕŕeueve mecePeeFS~ ieeCeše celWheāer[yekeā mes Deehe
keŕŕeeŕmecePeŕesnŕP ce[eŕd-5 meceueveŕej ieeCeše kaē ōUeeueve Gmekeā
ŕej ũe-™he kaēer merneŕeŕee mes mecePeeFS~

- 9. Explain the operation of any two of the following :
eŕeŕceueveŕeŕKeŕe celŕŕmes ekeāvneŕ oes kaēer ōUeeueve mecePeeFS :

 - (a) Mod-7 series counter
ceepŕŕeŕd-7 BeCeer ieeCeše
 - (b) Mod-10 series counter
ceepŕŕeŕd-10 BeCeer ieeCeše
 - (c) Mod-10 combination counter
ceepŕŕeŕd-10 meŕŕeepeve ieeCeše

A

(Printed Pages 4)

Roll No. _____

S-613

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

ELECTRONICS

Paper - I

(Advance Digital 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.

keŕue heeŕŕe ōŕŕveellŕkeā Gōej oeppeŕes ōŕeŕce ōŕŕve Deereŕeŕeŕe
nŕ ōŕŕŕeŕe FkeāF mes Skeā ōŕŕve keāeppeS~

- 1. Answer each of the following questions :
eŕeŕceueveŕeŕKeŕe ōŕŕŕeŕeŕe ōŕŕve kaē Gōej oeppeS: 2×10=20

 - (i) Explain the operation of an inverter.
ōŕeŕeueeskeā kaē ōUeeueve mecePeeFS?
 - (ii) What is a parity checker?
heŕj ŕer ũkeāŕj keŕŕee nedee nŕ?
 - (iii) Explain the working of half-adder.
Deze&ũeeppekeā kaēer kaēŕŕeŕeŕe mecePeeFũes
 - (iv) Describe the working of D-flip-flop.
D-Gueš-heueš kaēer kaēŕŕeŕeŕeŕeŕe kaē JeCete keāeppeS~

(2)

- (v) Draw the Circuit diagram of an RTL NOR gate.
RTL NOR iēs keā heġ heLe j KēēDeSe yeveFS~
- (vi) Explain, why an astable multivibrator is called a free running multivibrator.
mecePeeFS ekeā SmŠyge yenġeācheSe keāsoeāer-j eLe yenġeācheSe keġeēllkeānLes nġ
- (vii) Explain, Why NOR gate is called a Universal gate.
NOR iēs keāes medlekeā iēs keġeēllkeānLes nġ. mecePeeFS~
- (viii) What is speed limitation in series counter?
BeCeer iēeCeSe cellmheer[eLeēēšMeve keġee nestee nġ
- (ix) Explain the operation of a shift register.
eMheāš jēpēmšj keāe ōeUeeueve mecePeeFS~
- (x) What is Race problem?
jme mecēmŪee keġee nestee nġ

Unit-I / FkeāF-I 7 1/2

- 2. (a) Explain the operation of TTL NAND gate.
TTL NAND iēs keāe ōeUeeueve mecePeeFS~
- (b) What is a shift counter? Explain its operation with the help of its logic circuit.
eMheāš iēeCeSe keġee nestee nġ Fmekeāe ōeUeeueve lēkeā heġ heLe keāer menēUee mecePeeFS~
- 3. Explain how a shift register is formed? Give some of its important applications. Describe the operation of a 6-bit serial shift register for shifting the binary number 101101.
eMheāš jēpēmšj keāe eLeceēēe keāmes ekeāŪee peēlee nġ mecePeeFS~
Fmekeā keġŪ cenŪJheCeāGheUeeēllkeāes eLeēKeS~ 6-eġeŠ BeCeer eMheāš jēpēmšj keāe ōeUeeueve, GmecellŷeeFvej erDekeā 101101 keāesellmLeēve keāj ves cellmecePeeFS~

(3)

Unit-II / FkeāF-II 7 1/2

- 4. (a) Explain the two De-Morgan theorems. Give some of their important applications.
[e-ceēēte keā oēsēēllēceSe mecePeeFS~ Gvekeā keġŪ cenŪJheCeā GheUeeē oēpeS~
- (b) Explain the operation of XOR gate. Implement XOR gate using only
(i) NOR gates
(ii) NAND gates
XOR iēs keāe ōeUeeueve mecePeeFŪes XOR iēs keāe keāeUeeēŪJe keāēpeS keāeue :
(i) NOR iēsēllēēje
(ii) NAND iēsēllēēje
- 5. (a) What is full-adder? Explain its working with the help of its truth table.
heCeāŪeepekeā keġee nestee nġ Fmekeāe ōeUeeueve FmekeāermeŪeeceve meej Ceer keāer menēUee mecePeeFS~
- (b) Describe the working of a parallel binary adder to add the binary numbers 111001 and 101101.
meceveevleġ yeeFvej er Ūeepekeā keāer keāeŪēēēē keāe JeCeēte keāēpeS leLee Gmekeā ēēje 111001 Sġeb101101 yeeFvej er Dekeāllkeāe Ūeeē keāēpeS~

Unit-III / FkeāF-III 7 1/2

- 6. What is the difference between astable monostable and bistable multivibrators? Explain the operation of a bistable multivibrator to show that both the states are stable. Describe the operation of R.S. flip-flop.