meeueJ meue keÙee n? Fmekeâe yeveeJeš, e›eâÙee eJeeOe leLee JeeuŠ-SecheÙeJ uee#eeCekeâ Je›eâ mecePeeFS~

7. Explain the construction, working and application of p-n photodiode. What do you understand by dark current? 7½

heâeŠe[eÙee[keâe yeveeJeš, keâeÙe eJeeOe leLee GheÙeeie mecePeeFS~ Deoehle Oeeje me Deehe keÙee mecePele n~

Unit-IV/FkeâeF-IV

8. What do you mean by self-generation and passive transducers? Explain the principle of piezoelectric transducers with suitable diagram.

mJele: GlheVe šem[Ùemej leLee evee<›eâÙe šem[Ùemej me Deehe keÙee mecePele n? heepeeFueekeŠkeâ šem[Ÿemej keâe emeæevle eÛe$e keâe meneÙelee me mecePeeFS~ 7½

9. What is integrated circuit? Give an account of the fabricater of a monolithic integrated circuit Mention briefly the applications of integrated circuits.

Skeâekeâle heejheLe keÙee nelee n? ceeveeeueeLekeâ Skeâekeâle heejheLe keâe yeveeve keâe mecePeeFS~ mee#ehle ce Skeâekeâle heejheLe keâ GheÙeeiee keâe yeleeFS~

A (Printed Pages 4)

Roll No. _____

S-610

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

ELECTRONICS

First-Paper

(Electronic Devices)

Time Allowed : Three Hours] [Maximum Marks : 50

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

keâue heeÙe ØeMvee keâ Gòej oeepeÙe~ ØeMve me.1 DeeveJeeÙe n~ ØelÙekeâ FkeâeF me Skeâ ØeMve keâeepeS~

1. Answer the following questions in brief: 2×10

evecveeueeKele ØeMvee keâ mee#ehle Gòej oeepeS :

(i) What is the source of leakage current in transistor?

šeepemšj ce #eÙe Oeeje keâe œeele keÙee nelee n?

(ii) Why is the input impedance higher in MOSFET as compared to JFET?

ceemeheâš ce eveJeMee ØeeleyeeOee peheâš keâe leuevee ce DeeOekeâ keÙee nelee n?

(iii) Explain the significance of I_{CBO}

I_{CBO} keâe meeLekeâlee keâe mecePeeFS~

(iv) What is a tunnel diode.

Šveue [eÙee[keÙee nelee n?

(v) Why is n-p-n transistor construction preferred in integrated circuit?

Skeâekeâle hee jheLe ce n-p-n Šeepemšj jÛevee keâe ØeeLeecekeâlee keÙee ole n?

(vi) What are main applications of solar cell?

meej meue keâ ceKÙe GheÙeeie keÙee n?

(vii) What is piezoelectricity?

ehepeeFueekeŠemeŠe keÙee n?

(viii) What are Photodetecors?

ØekeâeMe-meÛekeâ keÙee nele n?

(ix) Give Colour coding chart.

keâuej keâee[ie ÛeeŠ yeveeFS~

(x) Why is the base of a transistor lightly doped and thin?

Šeepemšj keâe yeme ¤ce [eeheie keâe leLee heleuee keÙee nelee n?

Unit-I / FkeâeF-I

2. What is junction transistor? Explain the mechanism of current flow in NPN transistor in common emitter configuration, Establish a relatinship between.

a and b If a =0.95, what will be the value of

b . 7½

meeOe Šeepemšj keÙee n? GYeÙeeve‰ Glmepekeâ me™heCe ce NPN Šeepemšj ce Oeeje keâ ØeJeen keâe øee>eâÙee mecePeeFS~

a leLee b keâ yeeÛe mecyevOe mLeeehele keâeepeS~ Ùeeo a =0.95, ne, lee b keâe ceeve keÙee neiee?

3. Explain how potential barrier arises in p-n junction diode. Explain the current flow mechanism in p-n junction diode and discuss one of its important applications. 7½

mecePeeFS ekeâ p-n meeOe [eÙee[ce e[hueeMeve melen keâme Glheve nelee n~ p-n meeOe [eÙee[ce Oeeje keâ ØeJeen keâe øee>eâÙee mecePeeFS leLee Fmekeâe Skeâ cenlJeheCe GheÙeeie mecePeeFS~

Unit-II / FkeâeF-II

4. Discribe the construction and working of IMPATT diode in detail.

IMPATT [eÙee[keâe mejÛevee leLee e>eâÙee eJeeOe eJemleej me mecePeeFS~

5. How is PIN diode different from junction diode? Describe the working and characteristic of PIN diode. 7½

eheve [eÙee[, meeOe [eÙee[me keâme eYeVe nelee n? eheve [eÙee[keâe e>eâÙee eJeeOe leLee ue#Cee keâe mecePeeFS~

Unit-III / FkeâeF-III

6. What is a Solar cell? Discuss the construction working and volt-ampere characteristics curves. 7½