5. Describe spectral classification in detail.

leeje keâ JeCe›eâce keâe eJemleej me mecePeeÙe~

Unit-III / FkeâeF-III 7½

6. Describe the peculiar spectram.

eJeeMe° leejkeâeÙe mhekeŠce keâe JeCeve keâeepeS~

7. Explain spectral characteristics on the basis of Boltzman and saha equation.

leejkeâeÙe JeCe›eâce keâ DeeYeue#eCee keâe yeeuŠpeceve SJe meene keâ meceekeâjCee Éeje mecePeeFS~

Unit-IV / FkeâeF-IV 7½

8. How are polorization uneasurments Conducted for stars? What are the causes of polorization?

leeje keâ eueS OeJeekeâjCe ceehe ekeâme Øekeâej eueÙee peelee n? OeJeekeâjCe keâ keÙee keâejCe n?

9. Describe in detail the utility of Dopler effect in Astronomy.

Keeieeue eJe%eeve ce [ehuej ØeYeeJe keâe GheÙeeeielee keâe eJemleej me JeCeve keâeepeS~

A (Printed Pages 4)

Roll No. _____

S-691

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

ASTRONOMY

Second Paper

(Stellar Astronomy-I)

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

1. Attempt all parts : 2×10=20

meYee Yeeie keâeepeS :

(a) In the spectrum of a star the H_α(6563 A^o) line is red shifted by 0.01 A^o Calculate the Velocity of star in the line of sight.

Skeâ leej keâ JeCe›eâce ce H_α(6563 A^o) jKee 0.01 A^o me ueeue lejiee keâe lejheâ eKemekeâlee n~ Fme leej keâe ieele Âe° keâe eoMee ce %eele keâeepeS~

(b) What is the gravitational Contraction of a star? What is its importance?

Skeâ leej keâe ie™lJeeÙe mekeâÛeve keÙee n? Fmekeâe keÙee cenòee n?

(c) What are the CNO Cycle reactions?

CNO meeFekeâue Øeelee>eâÙeeS keÙee nelee n?

(d) Do the stars derive their energy from the fussion reactions or fission reactions?

keÙee leej Dehevee Tpee meÙeueve DeeYee>eâÙeeDe DeLeJee eJeKeC[ve DeeYee>eâÙeeDee me JÙelheVe keâjle n?

(e) What is Helium flash?

neeueÙece heueMe keÙee n?

(f) Two stars have same surface Temperature. If luminosity of one star is 100 times of the other star, what is the ratio of their rodeo?

Ùeeo oe leeje keâe melenèÙe leeheceeve Skeâ meceeve ne Deej Skeâ leeje omej me 100 ievee keâeele Jeeuee ne, lee Gvekeâ Deæ JÙeeme keâe keÙee Deveheele neiee?

(g) What do you understand by stellar clusters?

leeje hepee me Deehe keÙee meceÞele n?

(h) What is the color index of a star which is spectral class AO?

Gme leej keâe jieekeâ keÙee n, epemekeâe mhekeš ceeÙe Jeie AO n?

(i) Why Balmer lines are weak both in the hottest and coolest stars?

DelÙeeOekeâ iece SJe DelÙeeOekeâ "[leeje ce yeeÙej jKeeÙe keÙee oyeue nelee n?

(j) What are the thermonuclear reactions?

LeceevÙeekeueÙej DeeYee>eâÙeeS keÙee n?

Unit-I / FkeâeF-I 7½

2. Discuss the Stefan's Boltzman law of radiation with its utility in Astronomy.

eJeekeâjCe keâ mšeheâve yeeušpeceve eveÙece keâe JeCeve keâjle nS Keieeue eJe%eeve ce Fmekeâe GheÙeeeielee hej ØekeâeMe [eueS~

3. Give a brief description of basic ideas of formation of spectral lines.

mhekeš ceeÙe jKeeDee keâ yeveve keâe ceue Oeejcee keâe me#ehe ce JeCeve keâeepeS~

Unit-II / FkeâeF-II 7½

4. Discuss the stellar evolution is detail.

leejkeâeÙe eJekeâeme keâe eJemleej heJekeâ eJeJeÛevee keâeepeS~