



RAN - 2103000206030067

RAN-2103000206030067**T. Y. B. Sc. (Sem. - VI) Examination September - 2023****Physics : Elective Course - I****Astrophysics - II****[Total Marks: 50****सूचना : / Instructions**

(1)

नीचे दशविले निशानीवाणी विगतो उत्तरवली पर अवश्य लपववी.

Fill up strictly the details of signs on your answer book

Name of the Examination:

T. Y. B. Sc. (Sem. - VI)

Name of the Subject :

Physics : Elective Course - I - Astrophysics - II

Subject Code No.: 2103000206030067

Seat No.:

Student's Signature

- (2) Draw neat diagrams wherever necessary.
- (3) Symbols used in the paper have their usual meaning.
- (4) Figures to the right indicate full marks of the question.
- (5) Scientific calculator may be used.

Q. 1. Answer the following questions in brief:**(10)**

1. Define Kelvin contraction time.
2. What is the degenerate electron gas?
3. What is degeneracy pressure?
4. State the Chandrasekhar limit for supernova explosion.
5. What are Pulsars?
6. What was the name given to first Pulsars?
7. 1 A.U. = _____ Km.
8. What is considered to be the best criteria for the identification of Quasars?
9. What is the size of angular diameter of Quasars in the sky?
10. What are Sayfert?

- Q. 2. (A) Answer any one the following questions in detail. (6)**
- (1) List the different nuclear reactions which may present in Sun like stars.
 - (2) Write a short note on White Dwarf.
- Q. 2. (B) Answer any one the following questions in brief. (4)**
- (1) Explain the use of H-R diagram in the construction of Stellar model.
 - (2) Discuss the Solar Neutrino puzzle.
- Q. 3. (A) Answer any one the following questions in detail. (6)**
- (1) Write a short note on Black Holes.
 - (2) Discuss the period distribution and loss of rotational energy in Pulsars.
- Q. 3. (B) Answer any one the following questions in brief. (4)**
- (1) Discuss the Binary Pulsars in detail.
 - (2) Describe the Schwarzschild radius in detail.
- Q. 4. (A) Answer any one the following questions in detail. (6)**
- (1) Write Optical properties of Quasars in detail.
 - (2) Discuss the Redshift of Quasars in detail.
- Q. 4. (B) Answer any one the following questions in brief. (4)**
- (1) Describe the Nuclei of some Radio Galaxies.
 - (2) Write a short note on “Seyfert Galaxies and N Galaxies.
- Q. 5. (A) Answer any one the following questions in detail. (6)**
- (1) Give a brief note on the fundamental equation of Cosmology.
 - (2) Write a short note on Cosmic Microwave Background Radiation
- Q. 5. (B) Answer any one the following questions in brief. (4)**
- (1) What is Cosmology and why it’s important to build cosmological theories?
 - (2) Draw the Schematic diagram showing universality of Hubble’s law and provide it’s explanation.
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