



RAN - 2103000206030067

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**T. Y. B. Sc. (Sem. - VI) Examination April - 2023**

**Physics : Elective Course - I**

**Astrophysics - II**

**[ Total Marks: 50**

**सूचना : / Instructions**

(1)

नीचे दृशविले निशानीवाणी विगतो उत्तरवही पर अवश्य लभवी.  
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.:

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| Student's Signature |
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- (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. How much is the life span of star like Sun?
2. Who have discovered the nuclear transmutation going on inside the star like Sun?
3. What is the degenerate electron gas?
4. When the stars are called White Dwarfs?
5. What are Pulsars?
6. From whom and when the first Pulsars was discovered?
7. What is the full form of QuaSaRS?
8. State Hubble's law.
9. How Quasars are distinct from normal stars?
10. State the full form of OVVs.

- Q. 2. (A) Answer any one the following questions in detail. (6)**
- (1) Discuss the equation of State for Stellar Interior.
  - (2) Write a short note on Stellar evolution.
- Q. 2. (B) Answer any one the following questions in brief. (4)**
- (1) Explain the phenomena of helium flash.
  - (2) Explain the use of H-R diagram in the construction of Stellar model.
- Q. 3. (A) Answer any one the following questions in detail. (6)**
- (1) Write a short note on discovery of Pulsars.
  - (2) Write a short note on Black Holes.
- Q. 3. (B) Answer any one the following questions in brief. (4)**
- (1) Discuss rotating Neutron star model of Pulsars in detail.
  - (2) Discuss the Binary Pulsars in detail.
- Q. 4. (A) Answer any one the following questions in detail. (6)**
- (1) Explain the Radio properties of Quasars in detail.
  - (2) Discuss Optical properties of Quasars in detail.
- Q. 4. (B) Answer any one the following questions in brief. (4)**
- (1) Write a short note on Active Galactic Nuclei.
  - (2) Discuss in brief “How Quasars was discovered”.
- Q. 5. (A) Answer any one the following questions in detail. (6)**
- (1) Discuss the law of Red-shift and the expansion of the universe.
  - (2) Write in details about the matter Density in the universe and deceleration parameter.
- Q. 5. (B) Answer any one the following questions in brief. (4)**
- (1) Discuss the CMBR in brief.
  - (2) What is Cosmology and why it’s important to build cosmological theories?
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