



SHRI LAL BAHADUR SHASTRI DEGREE COLLEGE, GONDA  
श्री लाल बहादुर शास्त्री डिग्री कॉलेज, गोण्डा  
AN AFFILIATED COLLEGE OF DR RAMMANOHAR LOHIA AVadh UNIVERSITY, AYODHYA, (U.P.)

## Department of Physics

### B.Sc VI Sem Solid State & Nuclear Physics

Name: \_\_\_\_\_ Roll Number: \_\_\_\_\_

1. What is the charge of a nucleus?
  - a) Negative
  - b) Positive
  - c) Neutral
  - d) Both positive and negative
2. The size of a nucleus is typically of the order of:
  - a)  $10^{-15}$  meters
  - b)  $10^{-14}$  meters
  - c)  $10^{-13}$  meters
  - d)  $10^{-12}$  meters
3. The mass number of an atom is the sum of:
  - a) Protons and electrons
  - b) Neutrons and electrons
  - c) Protons and neutrons
  - d) Protons, neutrons, and electrons
4. Which of the following is true about the nucleus of an atom?
  - a) It contains only protons
  - b) It contains protons and neutrons
  - c) It contains only neutrons
  - d) It contains electrons and neutrons
5. What is the name of the force that holds the nucleus together?
  - a) Gravitational force
  - b) Electromagnetic force
  - c) Strong nuclear force
  - d) Weak nuclear force
6. The number of protons in the nucleus is called the:
  - a) Mass number
  - b) Atomic number
  - c) Neutron number
  - d) Isotope number
7. Which of the following is the lightest particle in the nucleus?
  - a) Proton
  - b) Neutron
  - c) Electron
  - d) Photon
8. The nucleus of an atom is typically:
  - a) Positively charged
  - b) Negatively charged
  - c) Neutral
  - d) Both positive and negative
9. The binding energy of a nucleus is:
  - a) The energy required to split the nucleus into its constituent particles
  - b) The energy required to add electrons to the nucleus
  - c) The energy released during fission
  - d) The energy released during fusion

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10. The concept of the "nuclear force" primarily involves:
- Attraction between electrons
  - Attraction between neutrons
  - Attraction between protons
  - Attraction between nucleons (protons and neutrons)
11. Which of the following particles does not contribute to the mass of an atom's nucleus?
- Proton
  - Neutron
  - Electron
  - Both b and c
12. What is the approximate diameter of a typical atomic nucleus?
- $10^{-14}$  meters
  - $10^{-12}$  meters
  - $10^{-10}$  meters
  - $10^{-8}$  meters
13. Which force is responsible for the repulsion between two positively charged protons in the nucleus?
- Gravitational force
  - Electromagnetic force
  - Strong nuclear force
  - Weak nuclear force
14. The strong nuclear force is effective over:
- Long distances
  - Short distances
  - Infinite distances
  - Very short distances (about  $10^{-15}$  m)
15. Which of the following best describes the composition of the nucleus of an atom?
- Only electrons
  - Protons and neutrons
  - Protons, neutrons, and electrons
  - Protons and positrons
16. The number of electron in nucleus X of atomic number Z and mass number A is
- 0
  - Z
  - A-Z
  - A
17. The nucleon is the name used for
- All light nuclei
  - Hydrogen Nuclei only
  - Neutrons only
  - Proton & Neutrons Both
18. Packing fraction is
- Always Positive
  - Always Negative
  - Zero
  - May be Zero or have positive or negative value
19. Which is not a Magic Number
- 8
  - 12
  - 50
  - 58
20. The binding energy of a particle in MeV is
- 7
  - 28.3
  - 0
  - infinite

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# Shri Lal Bahadur Shastri Degree College, Gonda

## Department of Physics

### Continuous and Comprehensive Evaluation

2024-25

B.Sc.VI Semester

#### Paper- Solid State and Nuclear Physics

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7	Ayush Singh	22040100110056	20	04
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12	Shristi Tiwari	22040100110462	20	10
13	Pragati singh	22040100110038	20	11
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23	Ishani Seth	22040100110284	20	14
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49	Shiv Shankar	22040100110161	20	05
50	Ashish Kumar Tiwari	22040100110048	20	16
51	Deepshikha Rana	22040100110263	20	07
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