

Exam Date & Time: 29-Sep-2020 (10:00 AM - 01:45 PM)



## PSG COLLEGE OF ARTS AND SCIENCE

Note: Writing 3hrs: Checking & Inserting Image : 30mins

BSc DEGREE EXAMINATION MAY 2020  
(Sixth Semester)

Branch - CHEMISTRY  
INORGANIC CHEMISTRY -II [14CHU23]

Marks: 75

Duration: 210 mins.

### SECTION A

Answer all the questions.

- 1) Why lanthanides are called as inner transition elements? (2)
- 2) Comment on lanthanide contraction. (2)
- 3) What are actinides? (2)
- 4) Mention the names of Transuranic Elements. (2)
- 5) Define radioactivity. (2)
- 6) What is Half-life period? (2)
- 7) What are isotopes? Give examples. (2)
- 8) Define isobars with suitable examples. (2)
- 9) What are carbides? How are they classified? (2)
- 10) Write the uses of ionic nitrides. (2)

### SECTION B

Answer all the questions.

- 11) Explain the chemical properties of Lanthanides. (5)
  - a) [OR] Discuss the colour of Lanthanide compounds. (5)
  - b)
- 12) Explain the Actinide contraction and its consequences. (5)

- a)  
[OR] Discuss the comparison between lanthanides and actinides. (5)  
b)
- 13) How will you detect and determine the radioactivity by Geiger-Muller counter? (5)
- a)  
[OR] Mention the contributions of radioactivity. (5)  
b)
- 14) Explain how the isotopes are separated by Thermal Diffusion Method. (5)
- a)  
[OR] Discuss the structure of Isotones. (5)  
b)
- 15) Explain the structure and properties of Sodium borohydride. (5)
- a)  
[OR] Discuss about non-aqueous solvents and their types. (5)  
b)

### SECTION C

Answer 3 out of 5 questions.

- 16) i) Describe the extraction of Lanthanides from Monazite sand  
ii) Write notes on Lanthanide contraction. (10)
- 17) Explain the various steps involved in the preparation of uranium from its ore. (10)
- 18) Discuss the theory of radioactive disintegration with suitable example. (10)
- 19) i) Explain in detail about Aston's mass spectroscopic method  
ii) Justify the structure of isotopes of hydrogen. (10)
- 20) Describe the structure, preparation and properties of Lithium Aluminium hydride. (10)

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