



বিদ্যাসাগর বিশ্ববিদ্যালয়

VIDYASAGAR UNIVERSITY

M.Sc. Examinations 2020

Semester IV

Subject: CHEMISTRY

Paper: CEM – 495

(Organic, Inorganic and Physical Special)
(Practical)

Full Marks:100

Time: 4hrs.

Candidates are required to give their answers in their own words as far as practicable.

Paper: CEM 495

(Organic Chemistry Special Project)

Answer any one of the following questions:

The questions are of equal value. Candidates are requested to give their answer in their own words (limit: 250 words) as far as practicable.

1. Give the soft copy of the Power Point presentation.
2. Write down the Chemical Constituents of the individual plants.; Write down the extraction procedure, TLC analysis, chromatographic purification techniques and spectroscopic characterizations in your own words.

OR

Write in your own words the synthetic procedure and spectral characterizations for any chemical transformation carried out.

Topics:

No.		OR
1	<i>Abroma agusta</i>	<i>Aloe barbadensis</i>
2	<i>Alstonia scholaris</i>	<i>Ananau comosus</i>
3	<i>Apple peel</i>	<i>Azadirachta indica</i>
4	<i>Cajanus cajan</i>	<i>Carica papaya</i>
5	<i>Centella asiatica</i>	<i>Citronella grass</i>



6	<i>Citrus aurantiifolia</i>	<i>Clitoria ternatea</i>
7	<i>Costus igneus</i>	<i>Curcuma longa</i>
8	<i>Cynodon</i>	<i>Ficus benghalensis</i>
9	<i>Green synthesis</i>	<i>Hygrophilla auricullata</i>
10	<i>Dye degradation or Moringa oleifera</i>	<i>Osimum sanctum or Phyllanthus emblica</i>
11	<i>Psidium guajava</i>	<i>Terminalia chebula</i>
12	<i>Ziziphus jujube</i>	<i>Tinospora cordifolia</i>
13	<i>Blumela Lacera</i>	
14	<i>Tagetes Minuta</i>	

**Paper: CEM 495
(Inorganic Chemistry Special Project)**

Answer any one of the following questions:

The questions are of equal value. Candidates are requested to give their answer in their own words (limit: 250 words) as far as practicable.

1. Give at least five ppt slides describing your project work.
2. Write a review on the field of your project work.
3. Give a brief account on the methodologies that you have used to carry out your project work.
4. Give a brief account of the results that you have obtained in your project work.
5. State the major conclusions on your project work. Give a brief account on the applications of the type of work that you have done in your project.
6. Give future perspectives of your project work.
7. Write short notes on Green synthesis of silver nano particle and their properties.
8. Write short notes on Green synthesis of gold nano particle and their properties.
9. Write short notes on chemical synthesis of silver nano particle and their properties
10. Discuss on synthesis, structural characterization and properties of a phosphonate-coordinated compound.
11. Write a note on "synthesis, structural characterization and properties of a heterometallic compound".
12. Discuss on synthesis, structural characterization and properties of a tetrapyrrolyl imidazolidine ligand based coordination compound.



Paper: CEM 495
(Physical Chemistry Special Project)

Answer any one of the following questions:

The questions are of equal value. Candidates are requested to give their answer in their own words (limit: 250 words) as far as practicable.

1. Give at least five ppt slides describing your project work.
2. Write a review on the field of your project work.
3. Give a brief account on the methodologies that you have used to carry out your project work.
4. Give a brief account of the results that you have obtained in your project work.
5. State the major conclusions on your project work. Give a brief account on the applications of the type of work that you have done in your project.
6. What is meant by global reactivity descriptors? Give a brief account on the use of these descriptors in determining the minima and TS of a chemical reaction.
7. What is meant by NICS parameter? Write a brief account on how NICS parameter helps in determining the aromaticity of a molecule as well as metal clusters.
8. Write a short account on the methodologies to be adapted in computing the α_{av} , β_{av} , η and μ of a molecule.
9. Write down the different methodologies of preparation of hydrogel.
10. Explain the role of hydrogen bonding in self-assembly formation with suitable examples.
11. Discuss briefly the effect of pH and temperature in self-assembly formation.
12. Discuss the effect of electrolyte in self-assembly formation.