

	Sanjay Ghodawat University, Kolhapur Established as State Private University under Govt. of Maharashtra. Act No XL, 2017	2018-19
Year and Program: 2018-19/ S.Y. B. Sc.	School of Science	Department of Chemistry
Course Code: CHS204	Green methods in Chemistry	Semester – Even (IV)
Day and Date: Tuesday, 28/05/2019	End Semester Examination	Time: 3 hrs, Max Marks: 100 2.30 to 3.00 p.m.
PRN:	Seat No:	Section A Marks out of 20:
Students Signature	Signature of Jr. Supervisor	

Section A

Instructions:

- 1) All Questions are compulsory.
- 2) For MCQs mark tic (✓) for correct answer. No marks for multiple tics (✓).
- 3) Section A should be submitted to Jr. Supervisor immediately after first 30 min.

Q-1	Multiple choice questions.	Marks	level	CO
		20		
1	Synthetic methods designed to maximize the incorporation of all materials used in the process into the final product is called as----- i) Prevention ii) Atom economy iii) Both a & b iv) None of these	2	1	1
2	Renewable feedstocks (corn, potatoes, biomass) can be used to make many products as----- i) Fuels, bio-diesel ii) Plastics. iii) Both a & b iv) None of these	2	3	1
3	In chemistry and biology, the acceleration (increase in rate) of a chemical reaction by means of a substance is called ---- i) Inhibitors ii) Catalyst iii) All of these iv) None of these	2	3	1
4	Diels-Alder reaction gives ----- i) 50% Atom economy ii) 100% Atom economy iii) 70% Atom economy iv) None of these	2	3	1

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|----|--|---|---|---|
| 5 | Which of the following is the greenest solvent? | 2 | 3 | 2 |
| | i) Formaldehyde ii) Benzene | | | |
| | iii) Ethanol iv) Water | | | |
| 6 | Green chemistry can reduce the ----- | 2 | 3 | 2 |
| | i) Cost ii) Risk and Hazards | | | |
| | iii) Waste iv) All of these | | | |
| 7 | -----is example of green chemistry. | 2 | 1 | 2 |
| | i) Recycled carpet ii) A product made on earth day | | | |
| | iii) Sublimation reaction iv) Bio-plastics | | | |
| 8 | The use of solar power is covered within Green Chemistry Principle #6, which is related to-----. | 2 | 3 | 2 |
| | i) Atom economy ii) Design for energy efficiency | | | |
| | iii) Design benign chemicals iv) Less hazardous synthesis | | | |
| 9 | ----- is an excellent green solvent and greenhouse gas. | 2 | 1 | 2 |
| | i) Methanol ii) CFCs | | | |
| | iii) Carbon monoxide iv) Carbon Dioxide | | | |
| 10 | Green synthesis may include ----- of following. | 2 | 4 | 2 |
| | i) High temperature ii) Dichloromethane | | | |
| | iii) Fossil fuels iv) Microwave | | | |

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Course Code: CHS 204	Green methods in Chemistry	Semester – Even (IV)	
Day and Date: Tuesday, 28/05/2019	End Semester Examination	Time: 3 hrs, Max Marks: 100 3.00 to 5.30 PM.	
PRN:	Seat No:	Section B Marks out of 80:	

Section B

		Marks	level	CO
Q.2	Answer the following questions (Solve any Two)	12		
a)	Define atom economy. Explain in brief Diels-alder reactions.	6	2	1
b)	Explain the terms i) Green energy ii) Green Solvents iii) Green Catalyst	6	3	1
c)	Describe the sustainable energy route for green chemistry.	6	3	1
Q.3	Answer the following questions (Solve any Two)	12		
a)	Describe twelve principles of green chemistry.	6	2	1
b)	Write note on alternative energy sources.	6	1	1
c)	What is catalyst? Explain any two green catalyzed reactions.	6	2	1
Q.4	Answer the following questions (Solve any Two)	12		
i)	Define surfactants. How will you reduce smog production?	6	1	2
ii)	What is ozone depletion? Explain ozone depleting solvents with suitable examples.	6	2	2
iii)	Explain dry cleaning of garments.	6	1	2
b)	Answer the following questions (Solve any Four)	16		
i)	Explain surfactants for carbon dioxide.	4	2	2
ii)	Explain the marine antifoamant.	4	2	2
iii)	Explain in brief ozone depleting solvents with CO ₂ for precision cleaning of garments.	4	3	2
iv)	What is rightfit pigment? Give examples of green pigments.	4	2	2
v)	Write note on synthetic azo pigments.	4	1	2

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Q.5 a)	Answer the following questions (Solve any Two)	16		
i)	Describe the methods of prevention of ozone depletion.	8	3	2
ii)	Write note on synthesis of poly lactic acid plastic from corn.	8	1	2
iii)	Explain the efficient, green solvents of a compostable plastic.	8	2	2
b)	Answer the following questions (Solve any Three)	12		
i)	Explain the green role of azo pigments over toxic organic pigments.	4	2	2
ii)	Explain the green chemistry with suitable real world example.	4	4	2
iii)	Write note on designing of environmentally safe marine antifoulant.	4	4	2
iv)	Explain the suitability of azo pigments over to inorganic pigments.	4	3	2

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