Roll No.....

MSc CHEMISTRY
SCLS JAMIA HAMDARD
SEMESTER V EXAMINATION 2020
PAPER CODE; MCHDCE-305
PAPER TITLE; CATALYSIS AND GREEN CHEMISTRY

Max. Marks: 75

Time: 3h

Q,1 Answer *All* the following question briefly **(10X1.5=15)**

i. How green chemistry help in prevention of by-products?
ii. What is the critical temperature of carbon dioxide?
iii. How green chemistry help in prevention of hazardous waste?
iv. What is the main application of zeolites?
v. How green chemistry help in designing of safer chemicals?
vi. What is frequency of ultrasound sonicator?
vii. How green chemistry help in reduction of energy consumption?
viii. How green chemistry help in selecting appropriate solvent?
ix. How green chemistry help in selecting appropriate material?
x. What operating frequency of household's microwave?

Q.2 Answer *any one* out of two in details **15**

i. Calculate the atom economy of rearrangement reaction, addition reaction, substitution reaction and elimination reaction.

ii. Explain how designing of manufacturing plants, advance analytical technique and no use of protecting group result in greener products?

Q.3 Answer *any three* out of four in details **3X5=15**

i. Which solvent is more greener water or CO_2 and why?

ii. Explain the mechanism of how energy is given to a substance using microwave,

iii. Explain the role of solvent in microwave synthesis.

iv. What are the disadvantages of using microwave reactor for organic synthesis?

Q.4 Answer *any three* out of four in details **3X5=15**

i. Explain the role of piezeo-electric effect in sonochemistry.

ii. What are the various applications of ultrasound in organic synthesis?

iii. Why sonicators used in organic synthesis have lower frequency than that used for medical applications?

iv. What do you mean by tunable ionic liquids?

P.T.O

Q.5 Answer *any three* out of four in details **3X5=15**

i. What are solid acid catalyst?

ii. Explain the application of Ion-exchange resins?

iii. Explain the role of zeolites in enantioselective synthesis.

iv, What is the main application of pillard clays?

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