

**University of Mumbai**  
**Examination 2020**

Program: FE (REV. -2016) (Choice Based)Engineering

Curriculum Scheme: Rev2016

Examination: First Year Semester II

Course Code: FEC104 and Course Name: EC-II/AC-II

Time: 1 hour

Max. Marks: 50

For the students:- All the Questions are compulsory and carry equal marks .

Q1.	What is the characteristic smell for ester?
Option A:	Fruity like smell
Option B:	Fish like smell
Option C:	Rotten egg smell
Option D:	Alcoholic smell
Q2.	Which one is correctly matched?
Option A:	Acids – pH range above 7
Option B:	Acids – pH range below 7
Option C:	Acids – pH range 7 (neutral)
Option D:	Acids – pH range 8-9
Q3.	Which of the following is wrongly mapped?
Option A:	Sodium carbonate – Washing soda
Option B:	Sodium chloride – common salt
Option C:	Calcium carbonate – slaked lime
Option D:	Sodium hydroxide – caustic soda
Q4.	What will be the X in the following equation? $MgO + 2HCl \rightarrow X + H_2O$
Option A:	$Mg_2Cl$
Option B:	$2MgCl$
Option C:	$MgCl$
Option D:	$MgCl_2$
Q5.	Which one will change from red litmus to blue?
Option A:	NaCl
Option B:	HCl
Option C:	KOH
Option D:	LiOH
Q6.	Which of the following is not a category of catalysis?
Option A:	Homogeneous
Option B:	Heterogeneous
Option C:	Artificial
Option D:	Enzymatic
Q7.	Which of the following step is the rate determining step of contact theory?
Option A:	Diffusion of reactants to surface
Option B:	Adsorption of reactants at the surface

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Option C:	Chemical reaction at the surface
Option D:	Desorption of products from the surface
Q8.	The factor which determines the activity of a heterogeneous catalyst is
Option A:	Total surface area only
Option B:	The number of active sites per unit amount of catalyst only
Option C:	Method of preparation, prior treatment only
Option D:	Total surface area, number of active sites and method of preparation
Q9.	An _____ is a sol with the continuous phase a gas. Fog is an _____ of water droplets.
Option A:	Aerosol
Option B:	Emulsion
Option C:	Agglomerate
Option D:	Electrophoresis
Q10.	_____ is the movement of charged surfaces with corresponding ions and H <sub>2</sub> O in the stationary liquid induced by an external field.
Option A:	Colloidal suspension
Option B:	Emulsion
Option C:	Sedimentation potential
Option D:	Electrophoresis
Q11.	_____ is the generation of an electric field by locomotion of the liquid along stationary charged surfaces) Colloidal suspension
Option A:	Colloidal suspension
Option B:	Streaming potential
Option C:	Sedimentation potential
Option D:	Electrophoresis
Q12.	If the interstitial velocity is 40 and the length is 40 units what is the time required for displacement?(assume SI units)
Option A:	1
Option B:	2
Option C:	3
Option D:	4
Q13.	If the interstitial velocity is 50 and the length is 40 units what is the time required for displacement?(assume SI units)
Option A:	0.5
Option B:	0.7
Option C:	0.8
Option D:	0.6
Q14.	What is the wavelength range for UV spectrum of light?
Option A:	400 nm – 700 nm
Option B:	700 nm to 1 mm

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Option C:	0.01 nm to 10 nm
Option D:	10 nm to 400 nm
Q15.	Which of the following is the principle of Flame emission photometers?
Option A:	Radiation is absorbed by non-excited atoms in vapour state and are excited to higher states
Option B:	Medium absorbs radiation and transmitted radiation is measured
Option C:	Colour and wavelength of the flame is measured
Option D:	Only wavelength of the flame is measured
Q16.	Which of the following is not a detector used in Flame emission photometers?
Option A:	Photronic cell
Option B:	Photovoltaic cell
Option C:	Photoemissive tube
Option D:	Chromatogram
Q17.	In which type of chromatography, the stationary phase held in a narrow tube and the mobile phase is forced through it under pressure?
Option A:	Column chromatography
Option B:	Planar chromatography
Option C:	Liquid chromatography
Option D:	Gas chromatography
Q18.	In Thin layer chromatography, the stationary phase is made of _____ and the mobile phase is made of _____
Option A:	Solid, liquid
Option B:	Liquid, liquid
Option C:	Solid, gas
Option D:	Liquid, gas
Q19.	In a potentiometric DVM
Option A:	voltage is compared
Option B:	current is compared
Option C:	resistance is compared
Option D:	power is compared
Q20.	Identify the incorrect statement regarding aromaticity.
Option A:	It is the extra stability possessed by a molecule
Option B:	p-orbitals must be planar and overlap
Option C:	Cyclic delocalization takes place
Option D:	It does not follow Huckel's rule
Q21.	A Sample of Coal Has the Following Composition:- C= 70% O=23% H=5% S=1.5% N=0.4% Ash=0.1% Calculate Gcv of this Fuel
Option A:	6422.725 kcal/kg
Option B:	6423.725 kcal/kg

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Option C:	6419.725 kcal/kg
Option D:	6322.725 kcal/kg
Q22.	Calculate the % Atom Economy for the Following Reaction with Respect to Acetophenone. $C_6H_6 + CH_3COCl = C_6H_5COCH_3 + HCl$
Option A:	76.757
Option B:	76.677
Option C:	82.677
Option D:	77.777
Q23.	Hardness of water is due to the presence of salts of
Option A:	Potassium
Option B:	Chlorine
Option C:	Magnesium
Option D:	Boron
Q24.	1 degree Clarke = 1 part of $CaCO_3$ per _____ parts of water.
Option A:	10,000
Option B:	30,000
Option C:	50,000
Option D:	70,000
Q25.	Which of the following is an example of corrosion?
Option A:	Rusting of iron
Option B:	Tarnishing of silver
Option C:	Liquefaction of ammonia
Option D:	Rusting of iron and tarnishing of silver