MALLA REDDY ENGINEERING COLLEGE (AUTONOMOUS)

I B.TECH I SEMESTER MR15 Regulations

Subject: Applied Chemistry (Common for CE, Mining and ME Branches)

II Mid Question Bank

MODULE-III

1.The fiber obtained by the step polymerization of hexa-methylene-diamine & adipic acid is [ ]

a) Dacron b) Nylon c) Rayon d) terylene

2.Which of the following is an elastomer [ ]

a) PVC b) Nylon c) Butyl rubber d) polystyrene

3.Co-polymerisation of Isobutene and isoprene results in the formation of [ ]

a) Bakelite b) BUNA-S c) Butyl rubber d) Glyptal

4.Natural rubber is basically a polymer of [ ]

a) Chloroprene b) Propylene c) Isoprene d) Ethylene

6. The following is the monomer of Teflon [ ]

a) $F_2C=CF_2$ b) $H_2C=CHF$ c) $H_2C=CHCl$ d) $F_2C=CHF$

7. The following polymer has ester links in its structure [ ]

a) Nylon b) Bakelite c) PVC d) Terylene

8. The most commonly used reagent for vulcanization of natural rubber is [ ]

a) Graphite b) Sulphur c) Carbon black d) Dry ice

9. Cellulose acetate is a [ ]

a) thermoplastic b) thermosetting c) both d) none

10. Which one is used to make 'non-stick' cookware? [ ]

a) PVC b)polystyrene c)polyethyleneterephthalate) d) polytetrafluroethylene

11. Bakelite is prepared by the condensation of: [ ]

a) Benzene and formaldehyde b) Phenol and formaldehyde

c) Phenol and acetaldehyde d) Glycerol and phthalic acid

12. One of the important uses of Bakelite is for making: [ ]

a) Cables b) Electrical switches c) Cloth d) Hose pipe

13. Buna-S is an example of synthetic rubber. In this S represents [ ]

a) Silicone b) Sulpur c) Styrene d) Sodium

14.Peptide linkage contains [ ]

a)CO-OR b)COOH c)CHO d) CO-NH

15.PVC formed by [ ]

a)Addition polmerisation b)condensation polymerization c)vulcanization d) none of these

16. Conductivity of a polymer is only because of presence of [ ]

a) Presence Sigma bond b) Presence of Pi bond c) a & b d) none of these

17. Creating positive site on polymer is called [ ]

a) n-doping b) oxidation c) p-doping d) reduction

18. The only rubber that can't be vulcanized is [ ]

a) butyl rubber b) neoprene c) thiokol rubber d) isoprene

19.An organic polymer can be converted in to conducting polymer if it has [ ]

a) branched structure b)extensive conjugation in polymer c) non conjugate system d) none

20.Nylon is a [ ]

a) vinyl polymer b)polyester c) chloroprene d)polyamide

21.Which of the following is a natural fibre [ ]

a) silk b) pvc c)thiokol rubber d) polyethylene

22.Example for biodegradable polymer is [ ]

a) polylactic acid b)polystyrene c)BUNA-S d)None

23. Example for conducting polymer is [ ]

a) PVC b) Teflon c) Polyacetylene d) None of These

24.An example for p–dopant is [ ]

a) lewis acid b) sodium napthalide c) lewis base d)benzene

25.The polymers which can be drawn in the form of long filaments [ ]

a)Conducting polymers b) biodegradable polymers c) fibres d) none of these

Key for module-III

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
b	c	c	c	a	a	b	b	d	d	b	b	d	d	a	b	c	c	b	d

21	22	23	24	25
a	a	c	a	c

Module-IV

1. Which of the following fuel possesses the maximum calorific value [ ]

a.C=84%,H=6%,S=4%,O=6% b.C=86%,H=12%,S=1%,O=1%

c.C=90%,H=5%,S=2%,O=3% d.C=95%,H=2%,S=1%,O=2%

2.A good fuel should possesses [ ]

a. High ignition temperature b. moderate ignition temperature

c. high calorific value d. both b& c.

3. Which of the following is true [ ]

a. Coke posses better strength than coal

b. Coke burns with a long flame.

c. Coke burns with a short flame.

d. Sulphur content of coke is higher than that of coal from which it is obtained

4. The main constituent of natural gas is [ ]

a. Carbon monoxide b. Methane c. Hydrogen d. Ethane

5. A knocking sound is produced in the internal combustion engine when the fuel [ ]

a. Burns slowly b. Burns fast

c. Contains some water d. Is contaminated with lubricant

6. Petrol is a mixture of [ ]

a. Alkenes b. Alkanes c. Alkynes d. Aromatic hydrocarbons

7. Which of the following is not a fossil fuel [ ]

a oil b.natural gas c. geothermal d. coal

8. Moisture ,ash content, volatile matter and fixed carbon are measured for coal as part of [ ]

a Proximate analysis b. Ultimate analysis c.proximate and ultimate analysis d. None

9. LPG is predominantly a mixture of propane and [ ]

a.Methane b.Isopropane c. Butane d. Ethane

10. Combustion of which of the following fuel requires the highest amount of excess air [ ]

a light diesel oil b. natural gas c.LPG d.Coal

11. During combustion of gaseous fuels, deficiency of air [ ]

a. does not affect the flame b. Increase the flame temperature

c. tends to shorten the flame d. Lengthens the flame

12. Combustion reaction of fuel is [ ]

a. Exothermic b. Endothermic c. Auto catalytic d. none.

13. Fuels produce energy because [ ]

a. their oxidation reactions are endothermic.

b. they produce large volume of gases.

c. their oxidation reactions are exothermic.

d. none of these

14. Iso-Octane and n-heptane has assigned a rating of [ ]

a 0,100 b.50,50 c. 100,0 d. 20,80

15. The heat energy released is measured with the help of [ ]

a. energy meter b. Thermometer c. calorimeter d. anemometer

16. Fuels are derived as [ ]

a. natural and derived b. primary and secondary fuels

c. addition and condensation fuels d. both a &b

17. A good fuel should have [ ]

a. maximum anti knock property b. maximum knock property

c. minimum anti knock property d. all the above

18. The most impure form of coal is [ ]

a. Anthracite b.Peat c. Wood d. Lignite

19. The calorific value of biogas is [ ]

a. 1500kcal/m^3 b. 2500kcal/m^3

c. 5300kcal/m^3 d. 4300kcal/m^3

20. The fuel which has the highest calorific value is [ ]

a. wood b. petrol c. methane d. hydrogen

21. Biogas contains [ ]

a. carbodioxide b.methane c. ethylene d.acetylene

22. Natural fuel among the following is [ ]

a. oil gas b.coke c. petrol d.coal

23. $CaCl_2$ can absorb the following [ ]

a.carbondioxide b. carbonmoxide c.water d.nitrogen

24. Compressed natural gas mainly contain [ ]

a. CO b.N_2 c.CH_4 d.SO_2

25. The calorific value of a fuel is expressed as [ ]

a. k.cal/m b.k.cal/kg c. Cal/cm^3 d.k.cal /g

26. An example for secondary fuel is [ ]

a.petroleum b. Natural gas c.coke d.coal

27. Sulphur compounds from crude oil is removed by treating it with [ ]

a. NA_2SO_4 b.CuO c.NaCl d.MgO

28. The relationship between HCV and LCV is [ ]

a. LCV=HCV+0.9H*587 b. LCV=HCV-0.9H*587

c. HCV=LCV-0.09H*587 d. HCV=LCV+0.9H*587

29. Non-Combustible among the following is [ ]

a. Carbon b.Hydrogen c.Ash d.Sulphur

30. The fuel which gives more smoke is [ ]

a.petrol b. LPG c.CNG d.Coal

31. Cottrel's process involves removal of _____from crude oil [ ]

a. sulphur b.water c.carbon d.dirt

32. The following is used as catalyst in fixed bed catalytic cracking is [ ]

a. silica mixed with chromium oxide b.artificial clay mixed with zirconium oxide

c. china clay mixed zirconium oxide d. alumina mixed with zirconium oxide

33. Carbon chain length in gasoline is [ ]

a. C_1-C_4 b. C_5-C_8 c.C_{15}-C_{23} d. C_{20} above

34. Octane number is related with the following product [ ]

a.diesel oil b. Kerosene oil c.petrol d.lubricant oil

35. Isooctane has an octane rating of [ ]

a. 100 b.0 c.50 d.80

36. The presence of nitrogen in a coal sample is [ ]

a. desirable b. undesirable c. most desirable d.less desirable

37. The calorific value of fuel depends upon the percentage of [ ]

a.volatile matter b.ash c. fixed carbon d. moisture

38. A good fuel should posses_____moisture [ ]

a. high b. low c. very high d. none

39. The calorific value of gaseous is determined by [ ]

a. boy's or Junker's calorimeter b. Orsat's apparatus

c. Bergius process d. none of the above

40. The calorific value of LPG is [ ]

a. 27800kcal/m^3 b. 25000kcal/m^3 c. 29500kcal/m^3 d. 23450kcal/m^3

41. An Example for secondary solid fuel is [ ]

a. wood b. anthracite c. lignite d. coke

42. The cetane number of diesel can be improved by adding [ ]

a. tetra ethyl lead b. ethyl nitrate c. $NaNO_3$ d. HNO_3

43. The calorific value of diesel is [ ]

a. 11250kcal/kg b. 11000kcal/kg c. 11200kcal/kg d. 10000kcal/kg

44. The percentage of carbon in anthracite coal is [ ]

a. 92-95, b. 85-90 c. 60-70 d. none of these

45. The boiling range of gasoline is [ ]

a. 40 -120^0 c b.120^0 c above c. 180 -250 ^{0} c d. above 40^0 c

46. Which will have higher value [ ]

a. GCV b. NCV c. Both are equal d. cannot be predicted

47. Which is the elemental analysis is [ ]

a. Proximate analysis b.ultimate analysis c. both of these d.None of these

48.Conversion of coal to coke is called [ ]

a. Coalification b. carbonization c. bituminization d. none of the above

49.The presence of oxygen content in the coal_____the calorific value [ ]

a. increases b.decreases c. remains unchanged d. none of the above

50.an example for secondary gaseous fuel is [ ]

a.Natural gas b.CNG c. Bio gas d. both b & c

Key for Module-IV

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
d	d	d	b	b	d	b	a	b	d	d	a	c	c	c	d	a	c	c	d

21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
b	d	c	c	b	c	b	b	c	d	b	b	b	c	a	b	c	b	a	a

41	42	43	44	45	46	47	48	49	50
d	b	b	a	a	a	b	b	b	d

MODULE- V

1. In nano materials atoms/ molecules are fabricated in nano scale range [ ]

a) 1 – 10 nm b) 100 – 120 nm c)10 – 20 nm d)30 – 50 nm

2. The term NANO stands for [ ]

a)1 billionth of centimeter b) 1 billionth of meter c)1 billionth of foot dNone of these

3. Who is the father of nano materials science [ ]

a) Grahambell b) Dalton c) Richard feynmen d) Newton

4. Nano materials are classified into how many types [ ]

a) 2 b) 1 c) 5 d) 3

5. Which of the following is considered as one dimensional in nano scale [ ]

a) Quantum dots b) Carbon nano tubes c) Fullerenes d) Thin films

6. In nano scale nano wires and nano tubes are [ ]

a) one dimensional b) three dimensional c) two dimensional d) none of these

7. Bio polymers and nano tubes comes under [ ]

a) one dimensional b) three dimensional c) two dimensional d) none of these

8. The important property of nano materials which differs from other materials [ ]

a) increase in surface area b) decrease in surface area

c) increase in constant size d) none of these

9. In nano scale fullerenes are [ ]

a) one dimensional b) three dimensional c) two dimensional d) none of these

10. The catalyst in hydrogenation of oils [ ]

a) Raney Ni b) Rhodium hydrosols c) Palladium d) Silica

11. Which of the following nano materials show effective catalytic activity for methenation of $CO + H_2$ at low temperature [ ]

a) Palladium b) Silica c) MoS_2 d) Rhodium hydrosols

12. The stiffest and strongest fibers known [ ]

a) fullerens b) carbon nano tubes c) nano rods d) none of these

13. Which of the following nano wires show Photoluminescence [ ]

a) Zinc oxide b) semi conductor c) silicone d) carbon

14. The nano tubes of MoS_2 and CoS_2 are used as [ ]

a) semi conductors b) insulators c) storage device d) solid lubricants

15. The structure of C_{60} Fullerene [ ]

a) closed hollow cage b) square c) hexagon d) pentagon

16. Among the following which method will be used for the preparation of nano materials [ ]

a) DVD b) BOD c) CVD d) BAD

17. If the surface area of nano material increases, then its catalytic activity will [ ]

a) decreases b) increases c) no effect d) can't be determined

18. C_{20} fullerenes contains [ ]

a) Pentagons b) hexagons c) a & b d) heptagons

19. C_{60} fullerenes contains [ ]

a) Pentagons b) hexagons c) a & b d) heptagons

20. Carbon nano tubes also called as [ ]

a) Bucky ball clusters b) Bucky tubes c) solar tubes d) CVD

21. Who proposed green chemistry principles [ ]

a) Paul anastas b) john warner c) willium bent d) a&b

22. Synthetic methods should be designed to minimize incorporation of all materials used in the prosess in to final called [ ]

a) atom economy b) prevention c) a & b d) none of above

23. Among them which is green salvent [ ]

a) benzene b) dichloro methane c) super critical water d)duetrated water

24. The constituent in Deals – alder reaction [ ]

a) dienes b) allyl halides c) vinyl halids d) all the above

25. For green chemistry raw material should be [ ]

a) non - renewable b) renewable c) conventional d) economical

26. For the green reaction Bi-products must be high [ ]

a) true b) false c) Not applicable d) None

27. Which of the following reaction gives 100% atom economy [ ]

a)clemmenson reduction b) elimination reaction c) diels alder reaction d) aldol condensation

28.The usage of Phasgene and methyl chloride in the synthesis of Poly carbonates has been replaced by ---------- [ ]

a) di-phenylcarbonate b) phenol – formalihide c) rtiphenyl carbonate d) carbondioxide

29. The audible frequency range of ultrasounds [ ]

a) less than 16KHZ b) greather then or) equal to 16 KHZ c) a&b d)none of above

30. Microwave reaction are faster than thermal reaction [ ]

a) true b) false c) Not applicable d) None

31. Addition reactions give [ ]

a) 90% atom economy b) 75% atom economy c) 50% atom economy d) 100% atom economy

32. Econoburette is developed for [ ]

a) micro volumetric titration b)) semi- volumetric titration

c)) macro volumetric titration d) gravimetric titration

33.Econoburette was designed by [ ]

a) Paul anastas b) john warner c) willium bent d) Man singh

34. Which is the non – volatile solvent [ ]

a) Benzene b) Ammonia c) Phenol d) water

35. R4 stands for Reuse, Recycle, Replenish, Redesign [ ]

a) true b) false c) Not applicable d) None

36. A material which contains a mixture of two or more micro constituents, which are insoluble & differing in composition & forming distinct phases, is called [ ]

a) Polymer b) monomer c) composite material d) fibre.

37. The phase is continuous body constituent, which encloses the composite & give it its bulk form is called [ ]

a) Matrix b) Dispersed phase c) particulate d) Flakes

38. The phase is the structural constituent, which determines the internal structure of composite is known as [ ]

a) Particulate b) Dispersed phase c) Matrix d) Whiskers

39. The fibre obtained as continuous filament by the pyrolysis in an inert atmosphere are known as

a) Glass fibre b) Carbon fibre c) Aramid fibre d) None [ ]

40. The thin strong filaments or fibres several mm in length & several microns in diameter are known as [ ]

a) Flakes b) Aramid fibres c) Whiskers d) None

41. Mica is an example of [ ]

a) Whisker b) Matrix c) Flakes d) Glass fibre

42. Wood & bone are example of [ ]

a) Particulate composite b) fibre-reinforced composite c) Natural composite d) layered composite

43. Silicon carbide is an example of [ ]

a) Matrix b) layered composite c) Whisker d) Aramid fibre

44. A composite made from filament, a polymeric matrix & a bonding agent is known as [ ]

a) Fibre-reinforced composite b) particulate composite c) layered composite d) natural composite

45. The composite which forms ceramic bond with a metal is called [ ]

a) Matrix b) cermet c) Flakes d) Whisker

46. Plywood is an example of [ ]

a) Fibre-reinforced composite b) layered composite c) particulate composite d) None

47. The composite are made by dispersing particles of varying size & shape of one material in a matrix of another material are known as [ ]

a) Layered composite b) Aramid Fibre-reinforced composite c) particulate composite d) None

48. A fuel that is produced through contemporary biological process is known as [ ]

a) Bio fuel b) Bio sensors c) Bio surfocant d) None

49. Which of the following is not a characteristics of composites [ ]

a) Lower specific gravity b) high thermal expansion c) thermal shock resistance d) corrosion resistance

50. A device which uses a living organism or biological molecules, to detect the presence of chemicals is called [ ]

a) Bio surfocant b) Bio sensors c) Bio device d) None

Key for module – V

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	B	C	D	D	C	C	A	B	B	C	B	C	D	A

16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
C	B	A	C	B	A&B	A	C	D	B	B	C	A	B	A

31	32	33	34	35	36	37	38	39	40	41	42	43	44	45
D	B	D	D	B	C	A	B	B	C	C	C	C	A	B

46	47	48	49	50
B	C	A	B	B