THIRD YEAR B. PHARM. SEM V (CBCS)

PRACTICE MULIPLE CHOICE QUESTIONS

Organic Chemistry III

1. Which heterocycle undergoes nucleophilic substitution reaction
   A. pyridine
   B. thiophene
   C. furan
   D. pyrrole

2. Heating a mixture of aniline, nitrobenzene, glycerol, conc H_2SO_4 and $FeSO_4$ yield
   A. isoquinoline
   B. quinoline
   C. indole
   D. pyridine

3. Pyrrole when reacted with $POCl_3$ and DMF give
   A. Tetra hydro pyrrole
   B. 2-chloropyrrole
   C. 2-methyl pyrrole
   D. pyrrole-2-carbaldehyde

4. Which heterocycle is synthesized from carbohydrate?
   A. furan
   B. indole
   C. Pyrimidine
   D. Imidazole

5. Electrophilic aromatic substitution in thiophene takes place at which position
   A. 2
   B. 3
   C. 1
   D. 4

6. Cyclization of bis(2-aminoethyl) ethers give
   A. Piperidine
   B. Piperazine
   C. Pyridine
   D. Morpholine

7. Ethylene diamine reacts with oxirane to give

A. Piperidine
B. Morpholine
C. Pyridine
D. Piperazine

8. Isoquinoline when reacted with $NaNH_2$ gives

A. 2-amino isoquinoline
B. 1-amino isoquinoline
C. 6-amino isoquinoline
D. 5-amino isoquinoline

9. Reaction of α-acyl amino ketone with P_2S_5 yield

A. substituted pyrrole
B. substituted furan
C. Substituted thiazole
D. substituted thiophene

10. Cyclodehydration of α-acyl amino ketone in presence of H_2SO_4 is

A. Van Leusen synthesis of oxazole
B. Robinson Gabriel Synthesis of oxazole
C. Gabriel synthesis of thiazole
D. Hantzsch synthesis of thiazole

11. Among pyrrole, pyridine, pyrimidine and imidazole which is the most basic.

A. pyrrole
B. pyridine
C. pyrimidine
D. imidazole

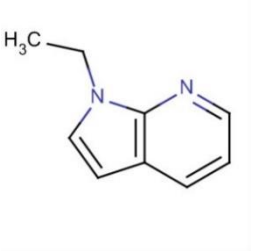
12. Reaction of phenyl hydrazine and acetophenone give

A. indole
B. quinoline
C. isoquinoline
D. pyrimidine

13.Which of the following heterocycle is synthesized from malonic ester

A. pyrimidine
B. pyridine
C. imidazole
D. pyrrole

14. Write IUPAC name of



A. 1-ethyl pyrido[2,3-b]pyrrole
B. 1-ethyl Pyrrolo[2,3-b]pyrimidine
C. 1-ethyl Pyrrolo[2,3-b]pyridine
D. 1-ethyl imidazolo[2,3-b]pyridine

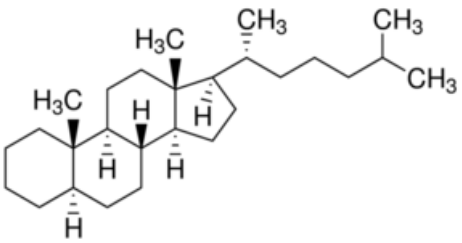
15. Estrane nucleus has ____ atoms

A. 18
B. 19
C. 21
D. 27

16. 1-Cholestene on bromination leads to the formation of

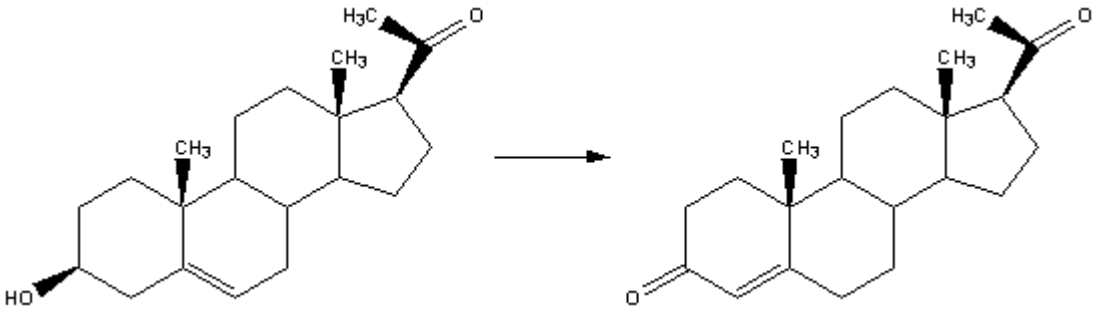
A. 1β, 2α-Dibromocholestene
B. 1α, 2β-Dibromocholestene
C. 1α, 2β-Dibromocholestane
D. 1β, 2α-Dibromocholestane

17. The stereochemistry at the B/C ring junction in the folowing structure is denoted as:



A. Syn
B. Trans
C. Anti
D. Cis

18. Identify the enzyme that converts pregnenolone to progesterone



A. Aromatase
B. 17-20 lyase
C. 17β-Hydroxylase
D. 3β-HSD

19. The 3 pK_a values for Lysine are 2.20, 8.90 and 10.28. Calculate the pI (isoelectric point)

A. 5.14
B. 9.59
C. 5.55
D. 6.24

20. 2-Oxopropanoic acid on reductive amination leads to the formation of

A. Cysteine
B. Glycine

C. Phenylalanine
D. Alanine

21. A peptide with composition: Ala, Phe, Cys_2, Tyr, Gly, Ser gives the following fragments on hydrolysis.

Gly-Cys-Ser

Cys-Ala-Phe

Ser-Tyr

Phe-Gly-Cys

Identify the structure of the peptide

A. Cys-Ala-Phe-Gly-Cys-Ser-Tyr
B. Ser-Tyr-Phe-Gly-Cys-Cys-Ala
C. Gly-Cys-Ser-Tyr-Cys-Ala-Phe
D. Cys-Ser-Tyr-Cys-Ala-Phe-Gly

22. During DNA synthesis, DMT is used as a protecting group for

A. Adenine
B. 5'-OH of deoxyribose
C. Guanine
D. Thymine

23. Identify the monomers that are unsuitable for condensation polymerization

A. Hydroxy acids
B. Butane-dioic acid and glycol
C. Propanoic acid and ethanol
D. Diamines and dicarboxylic acids

24. For addition polymerisation, the monomer used is

A. Saturated

B. Trifunctional saturated
C. Unsaturated
D. Bifunctional saturated

25. Hexamethylenediamine and adipic acid lead to the formation of

A. Nylon 66
B. Nylon 6
C. Teflon
D. Polystyrene

ANSWER KEY

Question Number	Correct Option
1	A
2	B
3	D
4	A
5	A
6	D
7	D
8	B
9	C
10	B
11	D
12	A
13	A
14	C
15	A
16	C
17	B
18	D
19	B
20	D
21	A
22	B
23	C
24	C
25	A

Pharmaceutical Biotechnology

1. The restriction endonuclease is having a defence mechanism in the bacterial system against foreign DNA such as viruses. But how it is able to protect its own DNA?

a) By methylation of bacterial DNA by restriction enzyme

b) By methylation of foreign DNA by restriction enzyme

c) By phosphorylation of bacterial DNA by restriction enzyme

d) By phosphorylation of foreign DNA by restriction enzyme

2. A sequence is having two ends, 5’ and 3’. Which of the following statements is correct regarding the nature of the ends?

a) The 5’ end is having hydroxyl group

b) The 5’ end is having phosphate group

c) The 3’ end is having phosphate group

d) Any group can be present at any end

3. How many classes of restriction enzymes are there?

a) 2

b) 1

c) 3

d) 4

4. Choose the correct statement for BAC vector system.

a) BAC vector system stands for bacteria and chromosome

b) It usually accepts insert of size approximately 1000kbp

c) The repE and oriS sequences are required for controlling the copy number and par A-C sequences are required for replication

d) A selectable marker is there for chloramphenicol resistance

5. Which of the following is an inorganic material used as support?

a) Pectin

b) Gelatin

c) Ceramics

d) Alginate

6. All of the following statements are correct about the active and passive immunization process, Except?

a) Both can occur naturally as well as artificially

b) Active immunization is the inoculation of live, attenuated and dead pathogens

c) Both types of immunization may provide long term protection to the immune system

d) Administration of preformed antibodies are the form of passive immunization

7. Subunit vaccine is all, Except

a) A whole purified virus

b) A purified part or pieces of the antigen

c) An expensive type of vaccine

d) A Hepatitis-B vaccine

8. The five classes of immunoglobulin include the following except

a) IgA

b) IgD

c) IgE

d) IgH

9. Which of the following class of immunoglobulin is dimeric structure?

a) IgA

b) IgD

c) IgH

d) IgM

10.The monomeric immunoglobulin consists of heterodimers of heavy (H) and light (L) chain bound together by non-covalent interaction and disulfide bonds. Which of the following is the antigen binding site?

a) Fab

b) Fc

c) Hinge region

d) None of the above

11.The hinge region of the immunoglobulin consists of the disulfide bond that held the heterotetramer together. Also, it contributes to the flexibility of the antibody chain. Which of the following antibody class do not have a hinge region?

a) IgA

b) IgD

c) IgE

d) IgG

12.The growth of plant tissues in artificial media is called_____

a) Gene expression

b) Transgenesis

c) Plant tissue culture

d) Cell hybridization

13.Which of the following scientists created the first Bioinformatics database?

a) Dayhoff

b) Pearson

c) Richard Durbin

d) Michael.J.Dunn

14. The human genome contains approximately_____.

a) 6 billion base pairs

b) 5 billion base pairs

c) 3 billion base pairs

d) 4 billion base pairs

15. The process of *in vivo* amplification of DNA is called as_____

a) PCR

b) DNA replication

c) Gene Machine

d) gene gun

16) _____ is the non-coding sequence of DNA

a) Exon

b) Intron

c) both

d) codon

17) While constructing cDNA hybrid of DNA and RNA is separated by_____

a) Enzyme

b) Acid

c) Temperature

d) Mechanical shear

18) Immunity by antibody received by kid from mother through lactation is_____

a) Artificial passive

b) Natural passive

c) Artificial active

d) Natural active

19) RLFP used to detect_____

a) DNA sequence

b) Genetic diseases

c) Immune response

d) both a and b

20) Vaccines are_____ immunity

a) Artificial passive

b) Natural passive

c) Artificial active

d) Natural active

Answers Key

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

Pharmacology II

1. Dalteparin sodium acts in the body to

a. regulate menstrual activity

b. prevent blood clot formation

c. inhibit thyroid function

d. inhibit viral replication

Q2. The mechanism of action of Raloxifene is:

a. inhibit bone resorption by an action mainly on the osteoclasts

b. act as selective oestrogen receptor modulators (SERMs)

c. analogue of parathyroid hormone

d. inhibits RANKL

Q3. Which of the following best describes the mechanism of action of Streptokinase?

a. It activates plasminogen to plasmin

b. Acts as antagonist at Adenosine (p2y12) receptor

c. Inhibits COX-2

d. Activates antithrombin III

Q4. _____ inhibits coagulation by activation of antithrombin III

a. Warfarin

b. Heparin

c. Hirudin

d. Aspirin

Q5. _____ is administered in acute iron poisoning

a. Ferric chloride

b. Vitamin B12

c. Desferrioxamine

d. Folic acid

Q6. The receptor for thyroid hormones belongs to which class of receptors?

a. Ligand gated ion channel

b. G-protein coupled receptor

c. Nuclear receptor

d. Tyrosine kinase receptor

Q7. Which of the following inhibits thyroid hormone synthesis?

a. ^{131}I

b. Sodium iodide

c. Thiocyanate

d. Propylthiouracil

Q8. _____ are bone forming cells derived from precursor cells in the bone marrow and the periosteum which secrete important components of the extracellular matrix of bone.

a. Osteoblasts

b. Osteoclasts

c. Osteocytes

d. Osteoid

Q9. _____ are advised to be consumed orally on an empty stomach with plenty of water in a sitting or standing position at least 30 min before breakfast because of their propensity to cause severe oesophageal problems.

a. Bisphosphonates

b. Raloxifene

c. Teriparatide

d. Vitamin D

Q10. Which of the following is an insulin analogue produced using recombinant DNA technology?

a. Aspart

b. Lente

c. Isophane

d. Protamine zinc

Q11. Which of the following anti-diabetic drug carries the risk of lactic acidosis?

a. Insulin

b. Metformin

c. Glibenclamide

d. Pioglitazone

Q12. Which of the following anti-diabetic drug has ‘weight gain’ as a side effect?

a. Insulin

b. Metformin

c. Glibenclamide

d. Pioglitazone

Q13. _____ has been used as a first line drug in many autoimmune diseases like rapidly progressing rheumatoid arthritis, severe psoriasis, pemphigus, and myasthenia gravis.

a. Methotrexate

b. Cyclosporine

c. Tacrolimus

d. Prednisolone

Q14. _____ is a type of adjuvant used in vaccine

a. Ferric sulphate

b. Calcium carbonate

c. Aluminium hydroxide

d. Protamine sulphate

Q15. Which of the following hormone increases uterine motility?

a. Oxytocin

b. Thyroid

c. Cortisol

d. Insulin

Q16. Which of the following class of antimicrobial agent is an antibacterial?

a. Penicillin

b. Cephalosporin

c. Fluoroquinolones

d. Tetracycline

Q17. Which of the following is a classical side effect of older generation of sulphonamide?

a. Hepatitis

b. Crystalluria

c. Haemolysis

d. Tendonitis

Q 18. Which of the following is a suicide inhibitor

a. Amoxicillin

b. Cephalothin

c. Clavulinic acid

d. Amikacin

Q19. What is the mechanism of action of aminoglycosides?

a. DNA synthesis inhibitor

b. Protein synthesis inhibitor

c. Cell wall synthesis inhibitor

d. Antimetabolite

Q. 20 Which of the following antifungal agent is an antimetabolite

a. Flucytosine

b. Amphotericin B

c. Nystatin

d. Clotrimazole

ANSWER KEY

Q.NO.	ANSWER	Q.NO.	ANSWER
1	b	11	b
2	b	12	d
3	a	13	a
4	b	14	c
5	c	15	a
6	c	16	c
7	d	17	b
8	a	18	c
9	a	19	b
10	a	20	a

Pharmaceutics II

1. Salmonella typhimurium is used in

a. Mutagenicity test

b. Teratogenicity test

c. Acute toxicity test

2. Eye irritation test is performed for

a. Lipstick

b. Shampoo

c. Eye shadow

3. According to schedule Q cosmetics shall not contain more than

a. 20ppm arsenic

b. 10ppm heavy metal

c. 20ppm lead

4. Which one is not a method to conduct descriptive sensorial analysis

a. Flash profile

b. Pivot profile

c. Linear profile

5. Antioxidant used in oil phase of emulsion formulaion

a. Sodium metabisulphite

b. L-tochopherol

c. Citric acid

6. Under the cap filling is done in manufacturing of aerosol by using

a. Pressure filling apparatus

b. Cold filling apparatus

c. Compressed gas filling apparatus

7. Veegum helps in manufacturing

a. w/o emulsion

b. o/w emulsion

c. w/o/w emulsion

8. In emulsion formulation mono molecular film is obtained using
a. Hydrocolloids
b. Surface active agents
c. Electrolytes

9. Suspending agent used in suspension formulation
a. Magnesium silicate
b. Tweens
c. Glycerine

10. Homogenizer used in manufacturing of suspension
a. Turbine mixer
b. Ribbon blender
c. Colloid mill

11. Which one is not a QC test of suppository
a. Extrudability
b. breaking load test
c. Disintegration time

12. Keratin helps in permeation of drug via
a. intercellular route
b. Intracellular route
c. trans appendageal route

13. In the formulation of semisolid bases Polyethylene glycol is used in
a. Emulsion base
b. Water soluble base
c. Absorption base

14. Buffers are not added to semisolid preparation to
a. Enhance stability of drug
b. Influence ionization of drug
c. Enhance penetration of drug

15. Blooming is a problem observed during

a. formulation
b. manufacturing
c. stability study

16. Which one is not a step in descriptive sensorial analysis

a. Selecting the product
b. Using instruments to analyse product
c. Assessing the product

17. The net content test of pharmaceutical aerosols measures

a. Total amount of drug
b. Total weight of product in container
c. Weight of product per actuation

18. Degree of flocculation has a minimum value of

a. 1
b. 10
c. 0.5

19. Stress test done on emulsion formulation is

a. Electrophoretic property
b. Viscosity
c. Centrifugation

20. Disintegration time for a fat based suppository is

a. Not more than 30min
b. Not more than 60min
c. Not more than 15min

Answer Key

Q.1 a

Q.2 b

Q.3 c

Q.4 c

Q.5 b

Q.6 a

Q.7 a

Q.8 b

Q.9 a

Q.10 c

Q.11 a

Q.12 b

Q13 b

Q.14 c

Q.15 c

Q.16 b

Q.17 b

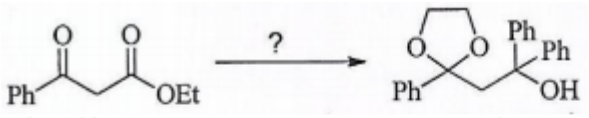
Q.18 a

Q.19 c

Q.20 a

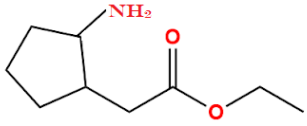
Synthon Approach

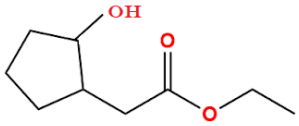
1. Which combination of reagents is appropriate for the following transformation?

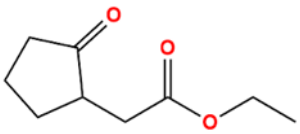


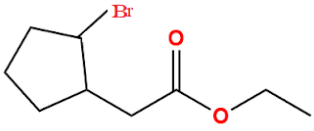
a) 1) $HO-CH_2-CH_2-OH, H^+$
   2) $2PhMgBr, H^+$
b) 1) $NaBH_4, MeOH$
   2) $LiAlH_4, Et_2O,$
   3) H_3O^+
c) 1) $LiAlH_4, Et_2O^+$
   2) H_3O^+
d) 1) $HO-CH_2-CH_2-OH, H^+$

2. Reduction of ester function of which of the following compounds using $LiAlH_4$ requires to be preceded by protection of other reducible groups

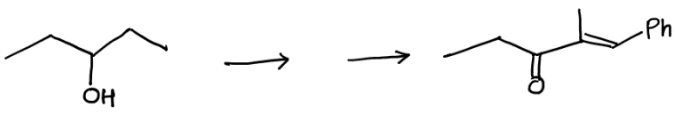
a) 

b) 

c) 

d) 

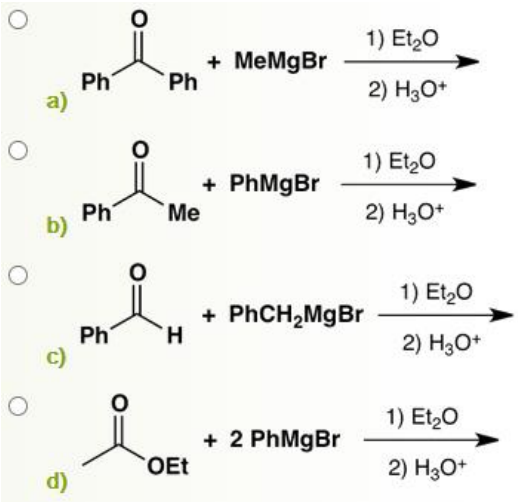
3. The sequence of reagents required at each step of the following transformation is best represented by:



a) $K_2Cr_2O_7$/ H_2SO_4 and NaOH, Ph-CHO
b) $NaBH_4$, NaOH and Ph-CHO
c) Ph-CHO, $NaBH_4$ and $K_2Cr_2O_7$/ H_2SO_4
d) H_2SO_4, Sn/HCl and Ph-CHO

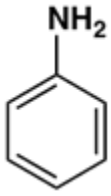
4. A real chemical compound that carries out the function of a synthon is known as
    a) FGI
    b) Synthon
    c) Target molecule
    d) Synthetic equivalent

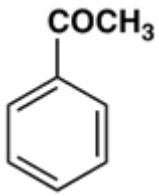
5. Which of the following reactions will not provide a synthesis of 1,1-Diphenylethanol

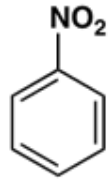


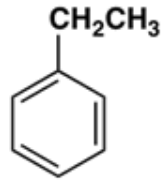
    a) a
    b) b
    c) c
    d) d

6. Which of (a)-(d) is the most suitable starting material for the synthesis of *m*-ethylaniline?

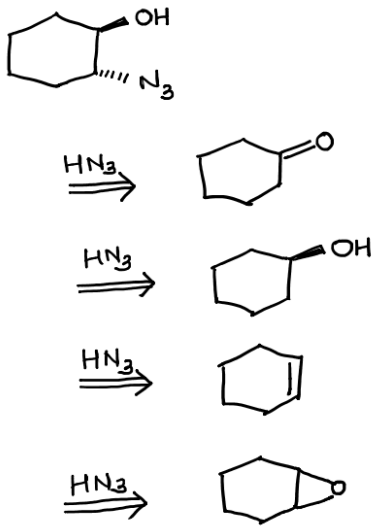
a) 

b) 

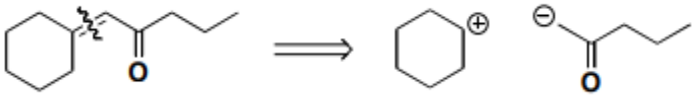
c) 

d) 

7. The correct retrosynthetic pathway for the following molecule is represented by



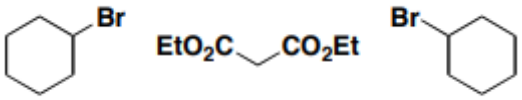
8. Which of the reagents below are the synthetic equivalents for the following disconnection



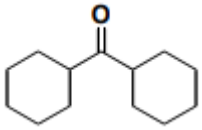
a) Cyclohexanone and 2-Pentanone
b) Cyclohexylchloride and 2-Pentanone
c) Cyclohexanone and Pentanal
d) Cyclohexanol and 1-Bromo-2-pentanone

9. The synthetic equivalent for $CH_3COCH_2^+$ is
   a) CH_3COCH_3
   b) CH_3COCH_2COOEt
   c) CH_3COCH_2Br
   d) CH_3COCH_2OH

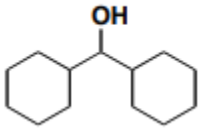
10. The combination of the following, leads to the formation of



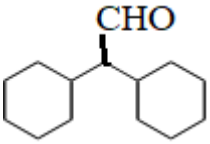
a)



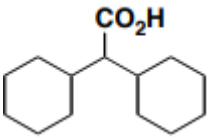
b)



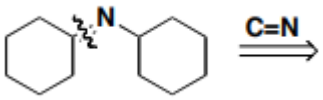
c)



d)

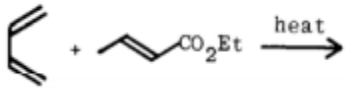


11. Identify the starting materials obtained after the following disconnection

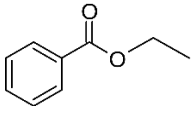


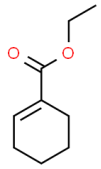
a) Cyclohexanone and cyclohexylamine
b) Cyclohexyl chloride and cyclohexylamine
c) Cyclohexane and cyclohexanamide
d) Cyclohexane carbaldehyde and cyclohexylamine

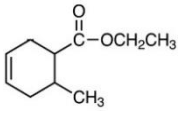
12. The reactants given below combine to form

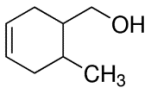


a)

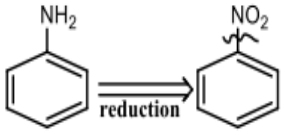


b) 

c) 

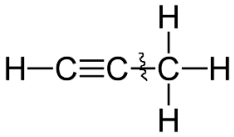
d) 

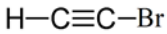
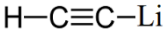
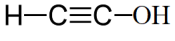
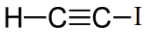
13. The following is an example of



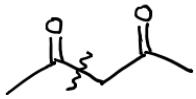
a) Functional group addition
b) Functional group interconversion
c) Functional group deletion
d) Functional group removal

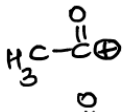
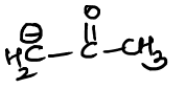
14. Identify the synthetic equivalents of synthons generated by the following disconnection

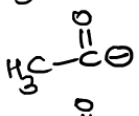
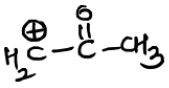


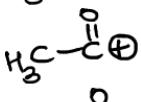
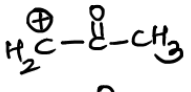
a) CH_3-I and 
b) CH_3-I and 
c) CH_3-Li and 
d) CH_3-Li and 

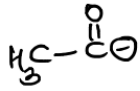
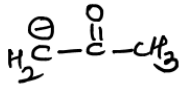
15. Identify the correct option corresponding to synthons generated by the following disconnection



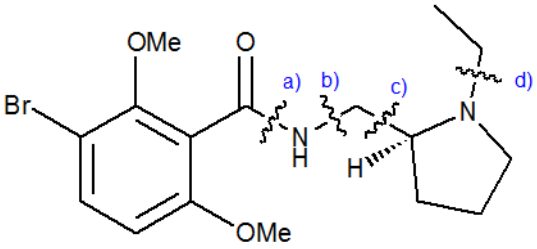
a)  and 

b)  and 

c)  and 

d)  and 

16. For the following structure, which of the disconnections (A-D) is likely to be the best option?



a) a
b) b
c) c
d) d

17. The synthetic equivalent for R^+ is

a) RCOOH
b) RNO_2
c) RCN
d) RX

18. when two o-,p-directing groups are meta to each other in the target molecule

a) A dummy -OH group is added
b) A dummy -COOH group is added
c) A dummy -Cl group is added
d) A dummy $–NH_2$ group is added

19. Reaction of 1,5-dicarbonyl compounds and ammonia leads to the formation of
    a) Pyrimidine
    b) Pyridine
    c) Pyrrole
    d) Thiophene

20. When two similar alkyl groups are disconnected simultaneously from an alcohol, the synthetic equivalents obtained are
    a) RMgX and Ketone
    b) RMgX and alcohol
    c) RMgX and Ester
    d) RMgX and Phenol

Answer Key

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

Cosmeticology

1. Gloss and hardness of lipsticks are largely dependent on
   A. Oil mixture
   B. Wax mixture
   C. Bromo mixture
   D. Pigment

2. Nitrocellulose is a film forming agent used in
   A. Mascara
   B. Nail lacquer
   C. Peel off face mask
   D. Sunscreens

3. Hair removed by chemical method without injury to skin
   A. Epilation
   B. Depilation
   C. Electrolysis
   D. Milling

4. The main ingredient in vanishing cream is
   A. Oleic acid
   B. Palmitic acid
   C. Stearic acid
   D. Linoleic acid

5. Example of abrasive used in dentifricies
   A. Calcium gluconate
   B. Calcium phosphate
   C. Calcium lactate
   D. Sodium lauryl sulphate

6. Which category of surfactant has good foaming and cleansing property but not used much because of toxicity and damage to eyes
   A. Cationic surfactant

B. Anionic surfactant
C. Non ionic surfactant
D. Alkyl sulphonates

7. Following is a test done on animals
   A. Repeat insult test
   B. Prophetic patch test
   C. Open epicutaneous test
   D. Test for sensitizing potential

8. Schedule S describes
   A. Sensitivity tests of cosmetics
   B. Stability of cosmetics
   C. Standards of cosmetics
   D. Records of raw materials

9. Which test is BIS for lipstick
   A. Water resistance
   B. Softening point
   C. Foaming
   D. Detergency

10. Humectant used in toothpaste is
    A. Glyceryl monostearate
    B. Gycerine
    C. Glucose
    D. Pyridoxine

11. Hydroquinone in cosmetic preparation is used as
    A. Moisturizer
    B. Cleansing agent
    C. Bleaching agent
    D. Skin toner

12. Which of the following is synthetic organic hair dye
    A. Lead acetate
    B. Silver nitrate
    C. Para amino diphenyl amine
    D. Diethyleneglycol monostearate

13. Triple roller mill is used in manufacturing of eye cosmetics to
    A. Mix pigment with molten wax
    B. Mold into stick
    C. Blend colour with oil
    D. Melting fatty ingredients in pan

14. Antiseptic baby lotions & creams can be prepared using the following
    A. Pyridinium chloride
    B. Stearic acid
    C. Beeswax
    D. Petroleum jelly

15. Bath salt of choice which has water-softening property is
    A. Sodium carbonate
    B. Sodium perborate
    C. Sodium sesquicarbonate
    D. Sodium bicarbonate

16. Following ingredient gives quicker & stable lather in shaving soaps
    A. Sodium stearate
    B. Potassium stearate
    C. Stearic acid
    D. Coconut fatty acids

17. Example of superfatting agent in lather shaving cream is
    A. Glycerin
    B. Menthol
    C. Stearic acid
    D. Methyl parahydroxy benzoate

18. Following agents are used in anti-dandruff shampoos for their bacteriostatic properties

    A. Cationic surfactants
    B. Diethylpthalate
    C. Alcohol
    D. Alkyl sulphates

19. Suntanning preparations are defined as those sunscreens which absorb minimum ____ UV radiations with 290-320 nm wavelength

    A. 95%
    B. 70%
    C. 85%
    D. 65%

20. Following system is a measure of protection against UVA radiation

    A. PA
    B. SPF
    C. AP
    D. PFS

ANSWER KEY

1. B
2. B
3. B
4. C
5. B
6. A
7. C
8. C
9. B
10. B
11. C
12. C
13. C
14. A
15. C
16. B
17. C
18. A
19. C
20. A

Nutraceuticals and Dietary Supplements

1. The recommended dose for carotenoids like Lycopene, lutein and zeaxanthine is _____ mg/day
    a. 5-10
    b. 10-40
    c. 100
    d. 75
2. Which of the following is modulated by light triggers?
    a. Shilajit
    b. Carnitine
    c. Melatonin
    d. Glutathione
3. Which of the following is a true statement?
    a. Nutraceuticals are a type of dietary supplement.
    b. Dietary supplements are a type of Nutraceutical.
    c. Stringent laws and regulations are levied on nutraceuticals
    d. Dietary supplements are a very new marketing segment.
4. Which is statement is correct about nutraceuticals?
    a. They increase the taste of food
    b. They are derived from food sources that are purported to provide extra health benefits, in addition to the basic nutritional value found in foods
    c. They are the same as dietary supplements
    d. They are prescribed only to patients
5. _____ is a type of insoluble dietary fibre.
    a. Pectin
    b. Gums
    c. Cellulose
    d. Fructo-oligosaccharide
6. Which of the following is a true example of a xanthophylls?
    a. Lutein
    b. Lycopene
    c. α-carotene
    d. β-carotene

7. _____ is used for the health of the Cardiovascular system
    a. Lutein
    b. Collagen
    c. Melatonin
    d. Reservetrol
8. The study of genome wide effects of diet or components thereof on the transcriptome, metabolome, of cells, tissues or organisms at a specific moment of time is _____
    a. Nutrigenomics
    b. Nutrigenetics
    c. Proteomics
    d. Metabolomics
9. Which of the following belongs to the class of Quinones?
    a. Lignans
    b. Pycnogenol
    c. Glucosinolates
    d. Tocopherol
10. Which Indian regulatory body deals with food fortification?
    a. FDA
    b. AGMARK
    c. FSSAI
    d. HACCP
11. Which of the following labeling claim is allowed for nutraceuticals?
    a. Prevents any heart disease
    b. Lowers cholesterol
    c. Take on medical prescription only
    d. Schedule H drug
12. Which is considered as heavy metal adulteration?
    a. Lead
    b. Mercury
    c. Arsenic
    d. Silica

13. Which is the organization responsible for issuing guidelines for standardisation of DONO?
    a. FSSAI
    b. FDA
    c. WHO
    d. UN
14. Concentration of phytoconstituent depends on_____
    a. Part of the plant collected
    b. Price of the plant
    c. Analytical method
    d. Market trend
15. What is the route of administration for probiotics?
    a. Oral
    b. IV
    c. Rectal
    d. IM
16. Which is a rich source of essential fatty acids?
    a. Olive oil
    b. Linseed oil
    c. Arachis oil
    d. Ghee
17. The colour of curcumin is_____
    a. Red
    b. Orange
    c. Yellow
    d. Colourless
18. _____ are nutraceuticals of microbial source
    a. Collagen
    b. Fish oils
    c. Prebiotics
    d. Probiotics
19. _____ are sulpur containing nutraceuticals.
    a. Avenanthramides
    b. Isoflavones
    c. Lycopene

d. Glucosinolates

20. Which of the following phenolic compound has bad absorption from the GIT?

a. Gallic acid
b. Catechin
c. Curcumin
d. Rutin

Answer Key

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