SUBJECT : **CHEMISTRY**

PAPER NAME : **NATURAL PRODUCTS (Optional)**

PAPER NO**.** : **PAPER XII -B (T) CHEM /6/CC/ 364B**

SEMESTER : **6th SEMESTER**

A. Multiple choice questions. (1 x 25 = 25)

Put a tick mark on the correct answer

1. Terpenoids are classified according to

   a) number of isoprene units involved in their biosynthesis

   b) number of double bonds

   c) number of cyclic polymer units

   d) none of the above

2. Diterpenoids are generally present in

   a) Conifer resins

   b) protective waxes of insects and fungi

   c) Gymnosperms and Angiosperms

   d) all of the above

3. Carotenoids are

   a) monoterpenoids

   b) diterpenoids

   c) Sesquiterpenoids

   d) tetraterpenoids

4. Water soluble alkaloids are isolated using

   a) petroleum ether

   b) ammonium Reinecke's solution

   c) distillation

   d) ethanol

5. The compound having a stimulant action in central nervous system is

a) Nicotine

b) Atropine

c) Camphor

d) α - pinene

6. Chromophores in Terpenoids absorbs UV range between

a) 200 – 350 nm

b) 300 – 400 nm

c) 150 – 250 nm

d) none of the above

7. IR spectrum of alcohol shows a broad intense band is shown by – OH group at

a) 3360 cm^{-1}

b) 1710 cm^{-1}

c) 2860 cm^{-1}

d) none of the above

8. Which of the following will not give UV – Visible spectrum

a) Benzene

b) Ethene

c) Acetone

d) n- hexane

9. The full form of TMS is

a) Tetra methyl Silane

b) Trimethyl Silane

c) Tertiary methyl Silane

d) None of the above

10. $\pi - \pi^*$ transition is found in

a) alkanes

b) alcohols

c) alkenes

d) amines

11. In Morphine there are

a) 5 asymmetric Carbon atoms

b) 3 asymmetric Carbon atoms

c) 4 asymmetric Carbon atoms

d) no asymmetric Carbon atoms

12. In rotenoids,

a) cis isomer is more preferred than trans isomer

b) trans isomer is more preferred than cis isomer

c) cis and trans isomers are equally preferred

d) none of the above

13. In cyclohexane conformation of Menthol all the three methyl groups are in

a) axial positions

b) equatorial positions

c) two equatorial and one axial positions

d) one equatorial and two axial positions

14. The molecular formula of abietic acid is

a) $C_{20}\ H_{30}\ O_2$

b) $C_{30}\ H_{20}\ O_2$

c) $C_{30}\ H_{30}\ O_2$

d) $C_{20}\ H_{20}\ O_2$

15. The molecular formula of Vinblastine is

a) $C_{44}\ H_{56}\ N_4\ O_8$

b) $C_{44}\ H_{50}\ N_8\ O_8$

c) $C_{44}\ H_{46}\ N_4\ O_8$

d) none of the above

16. The acid catalysed rearrangement reaction of morphine gives

a) Amorphine

b) Apomorphine

c) Thebaine

d) Neomorphine

17. Wesley – Moser rearrangement reaction is exhibited by

a) Alkaloids

b) Flavonoids

c) Terpenoids

d) Reserpines

18. The chemical substances released with specific, well defined physiological activities in insects are called

a) Enzymes

b) hormones

c) Pheromones

d) None of the above

19. Molecular yoga concept has been established from the reduction reaction of

a) N – methyl Pavine to N – methyl papaverine

b) N – methyl papaverine to N – methyl Pavine

c) Reserpic acid to Lactone

d) None of the above

20. To defend from predators, Ladybird beetle secretes

a) precoccinelline

b) poranthericine

c) nitropyrrolizidine

d) Soleopsin - A

21. The molecular formula of isoflavones is

a) C_{23} H_{22} O_{11}

b) C_{23} H_{22} O_{10}

c) $C_{24}H_{22}$ O_{11}

d) C_{23} H_{24} O_{11}

22. The molecular formula of Reserpine is

a) C_{20} H_{26} N_2 O_2

b) C_{20} H_{26} N_4 O_2

c) C_{20} H_{24} N_2 O_2

d) C_{22} H_{26} N_2 O_2

23. Reserpine is the alkaloids of

a) *Rauwolfia* species

b) opium

c) Ergot

d) None of the above

24. In biogenesis of morphine, the first step is

a) treatment with acetic anhydride

b) Hofmann degradation

c) Schmidt rearrangement

d) None of the above

25. In biogenesis of isoflavonoids, the starting compound is

a) Chalcone oxide

b) aldehyde

c) Chalcone

d) None of the above

B. Fill in the blanks. (1 x 15 = 15)

1) Alkaloids mostly contain basic _____.

2) Tetrapenoids are popularly known as _____.

3) The alkaloid having antimalarial activity is _____

4) NMR Spectroscopy comprises _____.

5) In UV Spectra, calculation of ʎ max can be obtained using _____ .

6) IR spectra is divided into _____ and _____

7) Morphine is an _____ alkaloid.

8) Menthol Abietic acid is a constituent of _____

9) Vinblastine is a _____ alkaloid.

10) Nametkin rearrangement involves migration of _____group.

11) The chemicals capable of acting like hormones outside the body to impact the behaviour of the receiving individuals are called _____

12) Molecular yoga is seen in the reaction of _____.

13) The chemicals which are components of network of signal communication in any ecosystem are known as _____.

14) Paraconic acid belongs to a class of _____ natural products.

15) Reticuline is a chemical compound based on the structure of _____

KEY ANSWER

A. Multiple choice question

1)	a	2)	a	3)	d	4)	b
5)	a	6)	a	7)	a	8)	d
9)	a	10)	c	11)	a	12)	a
13)	b	14)	a	15)	a	16)	b
17)	b	18)	c	19)	b	20)	a
21)	a	22)	a	23)	a	24)	b
25)	c						

B. Fill in the blanks

1)	Nitrogen	2)	Carotenoids	3)	Artemisinin
4)	PMR & CMR	5)	Woodward Fieser rule	6)	stretching vibration & bending vibration)
7)	opium	8)	rosin	9)	vinca
10)	methyl	11)	pheromones	12)	Papaverine
13)	semiochemical	14)	ϒ – butyrolactone	15)	benzylisoquinoline