

Name:

Enrolment No:



UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, December 2021

Course: Pharmacognosy and Phytochemistry II

Program: B. Pharm

Course Code: 504 T

Instructions: All the sections are compulsory.

Semester: V

Time: 03 hrs.

Max. Marks: 75

SECTION A

S. No.	CO		Marks
		Answer all the questions.	20
1.	CO1	Select the biosynthetic pathway by which aromatic amino acids are formed ? A) Acetate malonate pathway B) Acetate mevalonate pathway C) Shikimic acid pathway D) Polyacetatemalonate pathway	1
2.	CO1	Taxol belongs to which of the following chemical class of compound? A) Diterpene alkaloid B) Steroidal alkaloid C) Sesquiterpene D) Lignan	1
3.	CO1	Which of the following is an alkaloid with a purine skeleton? A) Hygrine B) Theobromine C) Ephedrine D) Strychnine E) Solanidine	1
4.	CO1	The volatile oils are complex mixtures of..... A) mono- and sesquiterpenes and phenylpropane derivatives B) mono- and diterpene alcohols and ethers C) sesquiterpenes and other aromatic compounds D) monoterpene acids and lactones	1
5.	CO2	Tannic acid is an antidote in _____ poisoning a) Iodine b) Cyanide c) Alkaloid d) Arsenic	1
6.	CO2	Select the test for cardiac glycosides from the following a) Legal's test b) Baljet's test c) Raymond's test d) All of these	1
7.	CO2	Modified anthraquinone test is positive for a) Aloe b) Senna c) Digitalis d) Vinca	1
8.	CO2	Example of proto alkaloid is a) Morphine b) Reserpine c) Ephedrine d) None of these	1
9.	CO3	Volatile oil's can be extracted by ----- A) Clavenger apparatus B) Hydrodistillation C) Both A & B D) None of the above	1
10.	CO3	Which of the following is racemic mixture of d-hyoscyamine and l-hyoscyamine A) Atropine B) Hyoscine C) Caffeine D) Diosgenin	1
11.	CO3	One of the reagent of Vitali Morin test is	1

		A) KCl B) Menthol C) Methanolic KOH D) Bromine water	
12.	CO3	Bromine water and ammonia solution is added in small quantity to powdered sample. Emerald green colour takes place which indicates the presence of A) Caffeine B) Quinine C) Atropine D) Vincristine	1
13.	CO4	Which of the following methods is used to get alkaloids in base form from plant material? A) Adding ammonium hydroxide and water to the pulverized drug B) Making an extract with mineral acid and organic solvent C) Making an extract with base and organic solvent D) Adding mineral acid and water to the powdered drug	1
14.	CO4	Which of the following are also known as balsams? A) Resins dissolved in volatile oil B) A mixture of volatile oils with sesquiterpenes C) Resins dissolved in water D) Polysaccharides mixed with volatile oil E) Juices evaporated to dryness	1
15.	CO4	Vincristine and vinblastine used for which of the following clinical ailments A) HIV B) Hodgkins disease C) Arthritis D) Anti-inflammatory	1
16.	CO4	The iridoids are... A) constituents of volatile oils B) starting units of tannin biogenesis C) precursors of the biosynthesis of saponins D) precursors of the biogenesis of certain alkaloids	1
17.	CO5	Pyrrole and pyridine rings are present in a) Atropine b) Vinblastine c) Digitoxin d) Quinidine	1
18.	CO5	Choice of extraction is related to a) Type of plant material b) Extraction time c) Quantity of the extract required d) All of these	1
19.	CO5	NMR spectroscopy is used to identify a) Number of hydrogens b) Functional groups only c) Both (a) and (b) d) None of these	1
20.	CO5	Saponin glycoside shows one of the following properties a) Foaming b) Laxative c) Astringent d) All of these	1
SECTION B			
Answer any two questions of the following.			20
1.	CO2	a) Classify the alkaloids based on its physical property. Give examples.	3+2+5

		b) "Purine based alkaloids will not give any positive result after adding Mayer's reagent" – why? c) Name the plant part, chemical constituents and uses of Rauwolfia and Belladonna	
2.	CO4	Explain Industrial production, estimation and utilization of forskolin.	5+5
3.	CO1	Discuss in brief the utilization of radioactive isotopes in biogenetic studies	10
SECTION C			
Answer any seven questions of the following.			5
1.	CO2	a) "Precipitation of alkaloids can be done through halogenations for high molecular weight containing compounds." –Explain with proper example b) Explain how Hager's reagent can be utilized for precipitation of alkaloids.	2.5+2.5
2.	CO5	 This is a figure of a typical TLC plate, which contain several bands/peaks with different Rf values for a mixture of compounds of an unknown plant extract. Now, how will you choose the column and solvents for column chromatography study to separate/isolate each compound from this plant extract?	5
3.	CO5	Which types of chemical constituents can be isolated through gas chromatography? Explain the process of gas chromatography technique by using any one example.	5
4.	CO2	Discuss the precautions to prevent deactivation of enzymes before extraction of glycosides.	5
5.	CO1	Identify the type of metabolites formed at each of the following step. <ul style="list-style-type: none"> • Electrophilic addition of IPP(Isopentyl pyrophosphate)with DMAPP(Dimethyl ally pyrophosphate) via enzyme prenyl transferase yield C10 unit, geranyl pyrophosphate (GPP), which is the precursor for synthesis of..... • Combinations of another IPP unit with GPP give rise to form farnesyl pyrophosphate (FPP), C15 unit which acts as a precursor for the synthesis of..... • Further addition of IPP unit gives C20 geranyl geraniol pyrophosphate (GGPP) to produce a range of..... • On further addition of IPP unit gives C25 geranyl farnesyl pyrophosphate called..... • The tail to tail addition of two FPP units yields C30 unit of..... • Similarly 2 units of GGPP yield C40 unit of 	5
6.	CO3	Explain in brief about isolation of Rutin	5
7.	CO4	Alcoholic solution of Sudan red III is added to the sample. Red colour appeared which indicates the presence of.....	1+2+2

