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(For those admitted in June 2023 and later)

SEM	CATEGORY	COMPONENT	COURSE CODE	COURSE TITLE
IV	PART-III	CORE - 7	U23BO404	PLANT DIVERSITY IV - GYMNOSPERMS, PALEOBOTANY AND EVOLUTION

Maximum: 75 Marks

Course Outcome	Bloom's K-level	Q. No.	<u>SECTION – A (10 X 1 = 10 Marks)</u> <u>Answer ALL Questions.</u>
CO1	K1	1.	Phloem of gymnosperms is devoid of _____. a) Sieve tubes b) Companion cells c) Phloem parenchyma d) None of these
CO1	K2	2.	Mucilage canals of cycas stem are _____. a) Schizogenous b) Iysogenous c) Schizolysogenous d) None of these
CO2	K1	3.	The number of integuments of pinus is _____. a) One b) Two c) Three d) Four
CO2	K2	4.	The gymnosperm wood popularly called “soft wood” is mainly used for_____. a) Making musical instruments b) Paper and pulp industry c) Producing silk d) Textile dyeing
CO3	K1	5.	Buried plants due to constant heat and pressure turn in to _____. a) Wood b) Coal c) Fertilizer d) Oil
CO3	K2	6.	Birbal sahani is popularly known as _____. a) Mycologist b) Paleobotanist c) Physiologist d) Psychologist
CO4	K1	7.	Rhynia is a fossil of which period _____. a) Carboniferous b) Devonian c) Jurassic d) Permian
CO4	K2	8.	Which fossil is commonly called a “giant horsetail _____. a) Rhynia b) Lepidodendron c) Calamites d) Williamsonia
CO5	K1	9.	Darwin proposed the theory of _____. a) Inheritance of acquired characters b) Natural selection c) Recapitulation d) Continuity of germplasm
CO5	K2	10.	The concept of adaptive radiation was developed by _____. a) Oparin b) Haldane c) HF Osborn d) Darwin

Course Outcome	Bloom's K-level	Q. No.	SECTION – B (5 X 5 = 25 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	11a.	Explain the general characteristics of gymnosperms? (OR)
CO1	K3	11b.	What is the mechanism of pollen germination in Cycas?
CO2	K3	12a.	Describe the post fertilization changes occurring in the ovule of Pinus? (OR)
CO2	K3	12b.	Discuss the angiospermic features of Gnetum?
CO3	K4	13a.	Explain the type of fossils with suitable example? (OR)
CO3	K4	13b.	Write a note on petrification of fossils?
CO4	K4	14a.	Describe the internal structure of rhynia stem? (OR)
CO4	K4	14b.	Explain about williamsonia?
CO5	K5	15a.	What is synthetic theory? Discuss how evolutionary mechanism? (OR)
CO5	K5	15b.	Write note on variation in evolution?

Course Outcome	Bloom's K-level	Q. No.	SECTION – C (5 X 8 = 40 Marks) Answer <u>ALL</u> Questions choosing either (a) or (b)
CO1	K3	16a.	Write an essay on gymnosperm classification? (OR)
CO1	K3	16b.	Give briefly morphology, anatomy and reproduction of cycas?
CO2	K4	17a.	Discuss the development of male gametophyte in Pinus? (OR)
CO2	K4	17b.	Write an essay on economic importance of gymnosperms?
CO3	K4	18a.	What are fossils? Describe the different types of fossilization processes. (OR)
CO3	K4	18b.	Describe geological time scale?
CO4	K5	19a.	Describe the reproduction and life cycle of Rhynia? (OR)
CO4	K5	19b.	Write an essay on lepidodendron.
CO5	K5	20a.	Write a brief account on evolution of Darwin theories. (OR)
CO5	K5	20b.	Examine that Darwin's finches represent adaptive radiation?