

Course
Code/NameRegulat

:BE3255BASIC CIVIL & MECHANICAL ENGINEERING
:2021

UPC– StudentPlanner

Slot	Unit .No	Nameofthe Unit	Questions	CO Mapping	Grade	
					A	B
1	V	Refrigerati onandairco nditionings ystem	<ul style="list-style-type: none"> Howistheairconditioningsystemclassified? 	C110.4	2,3,5	1,4
			<ul style="list-style-type: none"> Illustratewithneatsketchtheworkingprincipleofawindowtyper oomairconditioner. 			
			<ul style="list-style-type: none"> Explainwithneatsketchtheworkingprincipleofasplittyperoom airConditioner. 			
			<ul style="list-style-type: none"> Comparethewindowandsplittypeairconditioneranditsadvanta gesanddisadvantages 			
			<ul style="list-style-type: none"> Drawthelayoutofanairconditionerandexplaintheprincipleof operation. 			
2	IV	Internalcom bustionengin esandpowerp lants	<ul style="list-style-type: none"> Comparefourstrokeandtwostrokeengines. Comparepetrol(SI)engines anddiesel(CI)engines. 	C110.2	1,3, 4,5,	2,6,7
			<ul style="list-style-type: none"> Whatdoyoumeanbyboilermountings? brieflyexplaintheirfunctions. 			
			<ul style="list-style-type: none"> Describethefunctionofsalientcomponentofcentrifugalpumpw ithsuitablediagram. 			
			<ul style="list-style-type: none"> Drawthelayoutofdieselpowerplant. 			
			<ul style="list-style-type: none"> ListtheapplicationsandmeritsanddemeritsofDieselpowerplan t. 			
			<ul style="list-style-type: none"> Comparefourstrokeandtwostrokeengines. 			
			<ul style="list-style-type: none"> Comparepetrol(SI)engines anddiesel(CI)engines. 			
3	III	Buildingcomp onentsandstru ctures	Comparethedifferenttypesof pilefoundation.	C110.5	1,2, 3,4, 5,	6
			Whatarethetypes ofbeams?Explainitindetail.			
			Discuss thedifferenttypeofbondsinmasonry.			
			DistinguishbetweenEnglish bondandFlemishbond.			
			Comparebrickmasonryandstonemasonry.			
			Explainthemajorcomponents ofcolumnforms.			
4	II	Surveying and civil engineering materials	<ul style="list-style-type: none"> Describe the different types of cement. Explain their properties and uses. Explain the ingredients of cement along with their properties. Describe the tests conducted on bricks. Explain with neat sketch a dumpy level and indicate its parts. Classify the various types of surveying and explain any 	C110.1	1,2, 3,4, 5,6	

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			two in detail.			
5	I	Scopeofciv land mechanical engineerin g	<ul style="list-style-type: none"> • Composeallthefactors consideredforthesitepreparationforconstruction. • ExplaintheEnvironmentalengineeringaspects. • Composeallthemajorcomponents inAutomobilesystem. • ExplaintheInterdisciplinaryconceptsinCivilandMechanicalEngine ering. 	C110.3	1,2,3,4	
6			2 MARKS – ALL UNITS			

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UPC–Questions

Unit .No	Name of theUnit	Questions	CO Mapping	Grade	
				A	B
I	Dielectric Materials	1.TotalPolarization.(16) 2.InternalField.(16) 3. GaussLaw.(12) 4. Capacitor&itsTypes.(16) 5.Piezo,Pyro&FerroElectricMaterials.(8) 6.DielectricBreakdown.(10)	C110.1	1 2 3 4 5	6
II	Electrical & Magnetic Properties of Materials	1.Electrical&ThermalConductivity(12) 2.DensityofEnergyStates(16) 3.EffectiveMass(8) 4. Paramagnetism in ConductionElectron(8) 5. Classification ofMagneticMaterials(8) 6. ExchangeInteraction(8) 7.GMRDevice(8) 8. Quantuminterferencedevice-SQUID(8) 9. Fermi DistributionFunction(8) 10.TightBindingApproximation(8)	C110.2	1 2 3 4 5 6 7 8 - -	9 10
III	Semiconductor and Transport Physics	1. IntrinsicCarrierConcentration(16) 2. CarrierConcentrationofN-TypeSemiconductor(16) 3. CarrierConcentrationofP-TypeSemiconductor(16) 4. Halleffect(16) 5. SchottkyDiode&OhmicContacts(8+8)	C110.3	1 2 3 4 5	
IV	Optical Properties of Materials	1.LightDetector&Solar Cell(8+8) 2. LED&OLED(8+8) 3. LaserDiode(8) 4. Electro-OpticModulator(8) 5. SwitchingDevice(SEED)(8) 6.Plasmonics(8)	C110.4	1 2 3 4 5 -	6
V	Nano Devices	1.QuantumConfinement &DensityofEnergystateofSolids.(16) 2.SET(10) 3.CarbonNanoTube.(12)4.SPINTRONICS&SpinFET(10) 5. ZenerBlochOscillator(10) 6. SemiconductorPhotonicStructure.(12)	C110.5	1 2 3 4 5 -	6

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