B.Tech. Degree VIII Semester Examination, April 2008

CE 802 A/B CONSTRUCTION SAFETY AND FIRE ENGINEERING

(2002 Scheme)

Time: 3 Hours Maximum Marks: 100

I	a)	Write short notes on the human factors that are impediments to safety in construction.	(10)
	b)	What do you mean by the term "Ergonomics". Explain the role of ergonomics in construction industry.	(10)
		OR	
II	a)	Explain the following: i) Calculation of LTI ii) Reportable Accident iii) Severity rate	(10)
	b)	Discuss about the roles of different groups in ensuring safety at a construction site.	(10)
III		Discuss about the safety requirements in the case at the following activity i) Blasting of rock ii) Use of ladders iii) Storage, stacking and handling of cement bags iv) Use of trucks at construction site	(4 x 5 = 20)
		OR	
IV		Discuss about the safety requirements in the case of the following activity: i) Demolition of building ii) Working in confined space iii) Storage, stacking and handling of paint iv) Operation of mobile crane	(4 x 5 = 20)
V	a)	Define LFL and UFL. Discuss the significance of flammability limits in fire safety.	(7)
	b)	Discuss briefly the influence of fire on strength of concrete. How do you assess the strength variation in concrete.	(7)
	c)	Write short note on "Fire Stopped Areas"	(6)
		OR	
VI	a)	Explain how wood is affected by fire.	(7)
	b)	Discuss about the important requirements in the case of a fire wall design.	(7)
	c)	Explain how fire is classified as per BIS. Suggest method of extinguishments in each class of fire.	(6)
VII		Briefly explain the following in view of ensuring fire safety in buildings. i) FAR and limitation on maximum height ii) Selection of surface finishes iii) Openings in walls and ceilings iv) Installation of air-conditioning system	(4 x 5 = 20)
		OR	
VIII	a)	Explain how buildings are classified as per NBC. List the major classifications in each case.	
	b)	With a neat sketch, explain the salient features of wet riser.	
	c)	What is a fire lift? How is it different from ordinary lift?	
	d)	What is fire zone? How is zoning helpful in fire safety planning?	(4 x 5 = 20)
IX	a)	Write short notes on the exit requirements as per NBC.	(6)
	b)	How do you asses the fire damage to concrete structural members?	(7)
	c)	With a neat sketch, explain how a fire damaged concrete column can be repaired.	(7)
		OR	
X	a)	Write notes on the requirements other than the general requirements to ensure fire safety in the case of residential and storage buildings.	(6)
	b)	How do you assess the fire damage to masonry and timber structural elements?	(7)
	c)	With a neat sketch, explain how a fire damaged concrete beam can be repaired.	(7)

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