[3761]-110

F. E. (Semester - II) Examination - 2010 BASIC MECHANICAL ENGINEERING

(June 2008 Pattern)

Time: 3 Hours]

[Max Marks: 100

Instructions:

- (2) Answers to the two sections should be written in separate books.
- (3) Neat diagrams must be drawn wherever necessary.
- (4) Use of logarithmic tables, slide rule, Mollier charts, electronic pocket calculator and stream tables is allowed.
- (5) Assume suitable dat, necessary.

SECTION - I

Q.1) (A) Draw sketch and explain Joule's experiment with its conclusion.

[3+3+2=08]

- (B) State:
 - (1) Zeroti aw
 - (2) Second law of thermodynamics

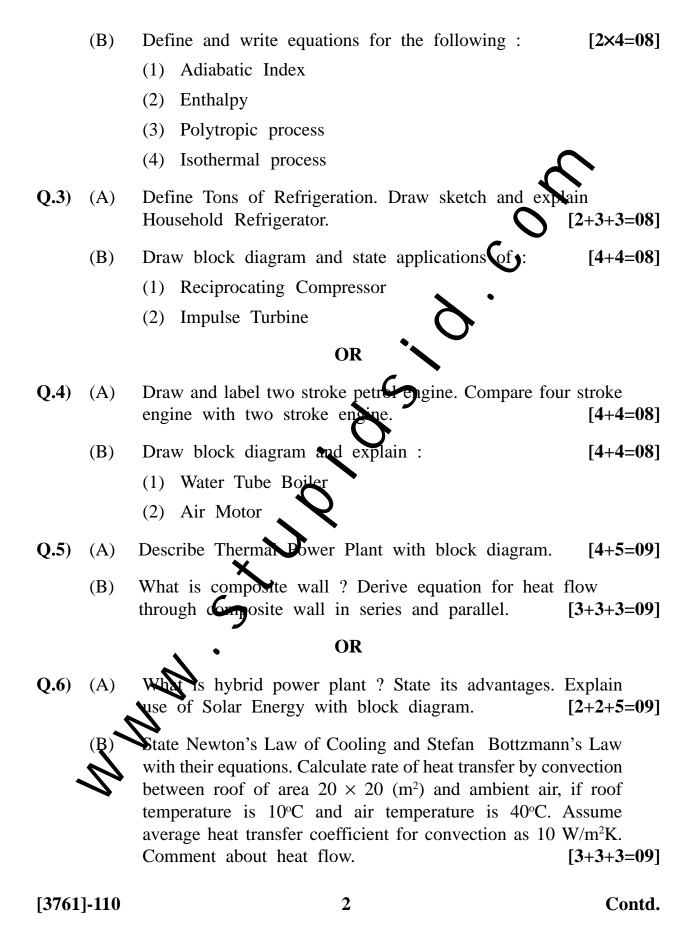
(3) Law of Energy Conservation

Ideal Gas Equation

 $[2 \times 4 = 08]$

OR

Q.2) (A) Differentiate between Heat Pump and Refrigerator. Also prove that $(COP)_{Heat\ Pump} - (COP)_{Refrigerator} = 1$ [4+4=08]



SECTION - II

Q.7)	(A)	Draw diagrams and state applications of :	[4+4=08]
		(1) Single Plate Clutch	
		(2) Flange Coupling	
	(B)	Compare flat belt and V belt. Draw and explain oper cross belt drive.	en and [4+4=08]
		OR C	
Q.8)	(A)	List different types of Brakes and explain any two wisketch.	th neat [2+3+3=08]
	(B)	Describe with neat sketch :	[4+4=08]
		(1) Woodruff Key	
		(2) Governor	
Q.9)	(A)	Explain any four operations on Drilling Machine with s sketch.	uitable [2×4=08]
	(B)	Explain Lathe Machine with block diagram. State value operations performed on it.	rious [3+3+2=08]
OR			
Q.10)	(A)	Explain And CNC Machine with neat sketch.	[4+4=08]
	(B)	Draw block diagram of Horizontal Column and Knee I Machine. Explain its working.	Milling [4+4=08]
Q.11)	(A)	Explain different mechanical properties of a materia	l. [4×2=08]
	(R)	Explain different steps in design process.	[05]
•	D	Explain soldering and brazing in brief.	[05]
OR			

- Q.12) (A) Draw sketch and explain shearing, bending, squeezing and drawing operations on sheet metal. [2×4=08]
 - (B) Write short note an plastic materials. [05]

(C) What do you mean by engineering design? Why there is need of design? 12+3=05