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	Reg. No. :	12 at Numeric waters were the same			
	Question Paper Co	ode:40518			
	B.E./B.Tech. DEGREE EXAMINAT Third Semest Aeronautical Engin AE 6302 – ELEMENTS OF (Regulations 20	ter neering AERONAUTICS			
Tin	ne : Three Hours	Maximum: 100 Marks			
	Answer ALL qu	Samuelared words			
	All short news				
	PART – A	A (10×2=20 Marks)			
1.	1. What are the differences between balloon flight and aircraft flight?				
2.	2. Name the forces acting on an aeroplane.				
3.	3. Differentiate between symmetrical and cambered airfoils.				
4.	4. Define ISA and what is its significance?				
5.	5. Name the basic instruments required for flights.				
6.	6. Define aspect ratio. What is its effect on induced drag?				
7.	What are the functions of ribs and spars?				
8.	8. Differentiate between Pratt and Warren trusses in the fuselage construction.				
9.	9. What do you mean by Cryogenic Propellants?				
10.	0. Differentiate between reciprocating engines and Gas Turbine Engines.				
	PART - F	(5×13=65 Marks)			
11.	Explain early developments in aerodyna supersonic flights.	unics related to subsonic and			
	(OR)				
	b) Explain the developments in aircraft structures over the years.				

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		Name the various types of drags and briefly explain the minimise the drags in an aircraft.	nethods to	
		(OR)		
	b)	By deriving suitable expression discuss the relationship of density and temperature at various altitudes.	f the pressure,	
13.	a)	Write down the classification of flight vehicles and briefly important features.	explain the	
		(OR)		
	b)	Explain in detail with sketches about power assisted and control mechanism. $$	power operated	
14. a) Write short notes on any four mater discuss their advantages.		Write short notes on any four materials used in aircraft st discuss their advantages.	tructures, also	
		(OR)		
	b)	Draw the stress-strain diagram and define the terms proportional limit, yield stress and ultimate tensile stress. How the stress-strain diagram of aluminium and steel differs?		
15.	a)	i) Write the classification of rockets.	(6)	
		ii) With aid of neat sketch explain the operation of Liquid Rocket engine.	l Propellant (7)	
		(OR)		
	b)	Write down the classification of aircraft engines. Explain any one engine with aid of a diagram. List down the comparison of different engines.		
		PART – C	(1×15=15 Marks)	
16.	a)	Draw three view diagram of a subsonic aircraft and explastate their functions.	in its parts and	
		(OR) Charles and the control of the	<b>€</b>	
	b)	Explain in detail the wing construction and the function structural components on aircraft wing.	of various	
		88=81×0) <u>H - TSI - H</u>	(V)	
			11. W Explain early supersome flar	
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