

Roll No.

--	--	--	--	--	--	--	--	--	--

Total No. of Pages : 02

Total No. of Questions : 09

B.Tech.(Aerospace Engg.) (2012 Batch) (Sem.-6)**SATELLITES AND SPACE SYSTEM DESIGNS**

Subject Code : ASPE-310

Paper ID : [72455]

Time : 3 Hrs.

Max. Marks : 60

INSTRUCTIONS TO CANDIDATES :

1. SECTION-A is COMPULSORY consisting of TEN questions carrying TWO marks each.
2. SECTION-B contains FIVE questions carrying FIVE marks each and students have to attempt any FOUR questions.
3. SECTION-C contains THREE questions carrying TEN marks each and students have to attempt any TWO questions.

SECTION-A**1. Write briefly :**

- (a) What do you mean by space mission life cycle?
- (b) How mission objectives are decided for a space flight?
- (c) What are criteria for selection of material for space flight?
- (d) What are major design requirements for a space craft?
- (e) What are main constraints for thermal design of a space craft?
- (f) What do you mean by thermal balance of a space craft?
- (g) What is space craft design envelope?
- (h) What are various control systems used for spacecrafts?
- (i) What are various types of tests carried out for space craft integration?
- (j) What do you understand by quality assurance of a space craft?

SECTION-B

2. Explain in details space mission life cycle, mission objectives, mission needs, mission requirements and constraints for a space flight.
3. Describe the process of configuration design of a space craft, design requirements and analysis process involved.
4. Explain the details of satellite thermal design and process for thermal design verification.
5. How space craft design envelope is determined and explain the process for selection of launch system.
6. Describe the various features of space vehicle design, mission concept and system engineering.

SECTION-C

7. Describe all aspects of spacecraft reliability and quality assurance, small satellite engineering and applications along with cost factor.
8. Explain with the help of neat diagrams, various types of space control system, telecommunication and navigation systems for a space flight.
9. Write notes on:
 - (a) Space environment and survivability
 - (b) Thermal technology and thermal balance.