

SECTION-C

Note: Short answer type questions. Attempt any twelve questions out of fifteen questions. (12x5=60)

- Q.21 Explain MIL STD 1533.
Q.22 What is the application of data buses? Give some examples
Q.23 Describe one of the typical avionics subsystems.
Q.24 Describe the functioning of Multi-Function display.
Q.25 How does fire control system work?
Q.26 Explain failure survival.
Q.27 Describe the effect analysis for failures in FCS?
Q.28 Describe briefly the system integration process.
Q.29 Represent all basic logic gates using any of the universal gates
Q.30 What is the method of aircraft identification?
Q.31 What is the importance of multi-function display?
Q.32 What are the features of FBW?
Q.33 What are the common mode of failures in flight control?
Q.34 What are the benefits of fiber optic buses?
Q.35 Describe various displays?

SECTION-D

Note: Long answer type questions. Attempt any two questions out of three questions. (2x10=20)

- Q.36 Explain the need of avionics in aviation today. Describe compass swing.
Q.37 What do you mean by navigation? What are the various methods of navigation? Describe frequency response of FBW system.
Q.38 Explain the functioning of
a) FBW actuators b) Failure survival c) DVI

SECTION-A

Note: Multiple choice questions. All questions are compulsory (10x1=10)

- Q.1 Which of the following does not come under air data computer?
a) Pressure ports
b) Pressure transducers
c) Computer
d) Output drivers for interfacing
- Q.2 Which of the following is true with respect to Head up display?
a) View and assimilate the flight data with his head up in a transparent display
b) Assimilate the flight data without looking at any kind of display panel
c) View and assimilate the flight data that is projected on the helmet
d) Using a head up display a pilot can view and assimilate the flight data in all 360°

- Q.3 What is the IFOV for a collimating lens of diameter 100mm, the distance between the collimating lens and combiner glass=50mm, the distance between pilot eyes and combiner glass=400mm?
 a) 25.0° b) 12.6°
 c) 28.0° d) 14.2°
- Q.4 Which one of the following is not a true with respect to integrated modular avionics architecture?
 a) Reduces weight
 b) Easy maintenance
 c) Hardware independent software
 d) Increased life cycle
- Q.5 Which one of the following is not true with respect with centralized architecture?
 a) Complex design
 b) Software can be written easily
 c) Requires long data buses
 d) Computers are in readily accessible bay
- Q.6 How is fly by wire system implemented in an aircraft?
 a) By using control rods and linkages connecting stick to control surfaces
 b) By using high power radio transmitters and receivers
 c) By using computers and actuators to control surfaces
 d) Artificial intelligence
- Q.7 What is the failure probability figure of a commercial aircraft?
 a) $1 \times 10^{-4}/\text{hr}$ b) $1 \times 10^{-6}/\text{hr}$
 c) $1 \times 10^{-11}/\text{hr}$ d) $1 \times 10^{-20}/\text{hr}$

- Q.8 a) Cross comparing signals and voting
 b) Monitoring signals
 c) Adding signals
 d) Subtracting signals
- Q.9 Which of the following does not come under air data computer?
 a) Pressure ports
 b) Pressure transducers
 c) Computer
 d) Output drivers for interfacing
- Q.10 What is the IFOV for a collimating lens of diameter 100mm, the distance between the collimating lens and combiner glass=50mm, the distance between pilot eyes and combiner glass=400mm?
 a) 25.0° b) 12.6°
 c) 28.0° d) 14.2°

SECTION-B

- Note:** Objective type questions. All questions are compulsory. $(10 \times 1 = 10)$
- Q.11 What are the various Avionic subsystems used?
 Q.12 What do you mean by Avionics packaging?
 Q.13 What is integrated modular Avionics?
 Q.14 What is LRU?
 Q.15 What is the use of Cooper Harper scale?
 Q.16 What do you mean by compass swing?
 Q.17 What are the benefits of fiber optic buses?
 Q.18 What are various displays?
 Q.19 What is multi-function keyboard?
 Q.20 What is HUD?