

School of Aeronautics (Neemrana)

I-04, RIICO Industrial Area, Neemrana, Dist. Alwar, Rajasthan

EXPECTED POINTS OF ANSWER FOR SUBJECTIVE QUESTIONS

Name of Examination: Fortnightly / Term.

Subject Avionics - II, Batch 7,894 MT-2 Semester 8 & 6

SUBJECTIVE QUESTION	EXPECTED POINTS OF ANSWER FROM STUDENTS
1- Explain the constructional details of air-craft DC generator.	<p>① This works on principle of Faraday's Law of electromagnetic Induction.</p> <p>① Yoke - assembly ② Field Winding assembly (a) pole core & pole shoes ③ Armature assembly (a) Armature core (b) Armature windings ④ Commutator ⑤ Bush-gear assembly ⑥ End frames assembly.</p>
2- Describe the operation of a typical aircraft AC Alternator.	<p>① A.C exciter which generates the power for the main generator field.</p> <p>② Rotating rectifier assembly mounted on, and rotating with, the rotor shaft to convert the exciter output to d.c.</p> <p>③ The main generator → The leads from the three stator phases are brought directly to the upper surface of an output terminal board, thus permitting the aircraft winding to be clamped directly against the phase leads without current passing through the terminal studs.</p>
Explain the performance characteristics of measuring instruments.	<p>① Static Performance characteristics Accuracy, Precision, Sensitivity, Resolution, Threshold value, error.</p> <p>② Dynamic Performance characteristics Dynamic error, Fidelity, speed of response, bandwidth.</p>
Explain the operation of Device measuring Translational and Seismic Displacement Velocity & Acceleration.	<p>Translational displacement - Using LVDT or Resistive Potentiometer</p> <p>Linear Velocity - Moving Magnet type Transducer Moving coil type transducer</p> <p>Seismic velocity - permanent magnet suspended with support of two springs and a damping device type transducer</p> <p>This device can also be used for acceleration and vibration.</p>

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SUBJECTIVE QUESTION	EXPECTED POINTS OF ANSWER FROM STUDENTS
Explain the operation of fuel flow indicating system.	Transmitter - Vane fitted in flow chamber is displaced proportional to the flow rate. The shaft is connected to synchro or potentiometer. Indicator - Receiver synchro shaft produces proportional pointer movement on calibrated or potentiometer produces proportional change in current.
Explain fuel gauging system.	Cylindrical parallel plate capacitor acts as fuel level sensor which varies the capacitance as level of fuel which acts as dielectric changes. Change in capacitance produces change in current in bridge circuit. out of balance current drives the servo operated indicator.
Explain the operation of Exhaust gas temperature indicator.	Sensor - Thermocouple senses the temperature and produces e.m.f. proportional to the difference in hot and cold junction. e.m.f. produced is the measure of exhaust temperature with suitable cold junction compensation which can be indicated with millivoltmeter calibrated in °C.
Explain the construction and operation of Magnetic Compass.	Magnetic system - made up of annular Cobalt steel. Pivot is made up of iridium held in sulphure cup. Case made up of Dia Kon plastic. Case is filled with silicon fluid. Bellow fitted for temperature variation compensation.

Note

1. Paper Setter is required to carefully write the expected point of answers for the questions, after consulting all the relevant books.
2. For any discrepancies found in answers, paper setter will be held responsible for playing with the career of the students, and doing breach of trust with them, and accordingly action can be taken by the disciplinary committee in this regard.
3. Principal before signing for the correctness of the answer shall ensure the same from relevant books. Point No. 1 & 2 above are applicable to Principal also in case any discrepancies are found in answers.

Dated 23/01/19

Signature of Paper Setter

Signature of Principal/HOD

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