Question Paper For Internal Assessment Examination (Theory) - Credit 3 / 109 / SET 1

NAME OF STUDY CENTER: SCHOOL OF AERONAUTICS, NEEMRANA

Instructions for Students / Faculty

Mid Term I (Total 60 Marks, 2 HRS. Syllabus from Unit-1)

- Part A: Total number of questions to be given are six (3 from CO1 and 3 from CO2), each carrying 2 marks and are compulsory to attend. There is no choice. They are short answer type questions **(Not More Than 25 Words for Both Question & Answer)**, no objective type or fill in the blanks. Total 12 marks.

- Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student has to answer four (2 from CO1 and 2 from CO2). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 4 marks. Total 16 marks.

- Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student has to answer four (2 from CO1 and 2 from CO2). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 8 marks. Total 32 marks.

Mid Term II (Total 90 Marks, 2.5 HRS., Syllabus from Unit-2)

- Part A: Total number of questions to be given are ten (5 from CO3 and 5 from CO4), each carrying 3 marks and are compulsory to attend. There is no choice. They are short answer type questions **(Not More Than 25 Words for Both Question & Answer)**, no objective type or fill in the blanks. Total 30 marks

- Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer four (2 from CO3 and 2 from CO4). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 6 marks. Total 24 marks.

- Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student has to answer any four (2 from CO3 and 2 from CO4). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 9 marks. Total 36 marks.

Mid Term III (Total 90 Marks, 2.5 HRS., Syllabus from Unit-3)

- Part A: Total number of questions to be given are ten (5 from CO5 and 5 from CO6), each carrying 3 marks and are compulsory to attend. There is no choice. They are short answer type questions **(Not More Than 25 Words for Both Question & Answer)**, no objective type or fill in the blanks. Total 30 marks

- Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6). They are long answer type (**Not More Than 50 Words for Question)**, each carrying 6 marks. Total 24 marks.

- Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6). They are numerical answer type / fully elaborative type (**Not More Than 70 Words For Question)***, each carrying 9 marks. Total 36 marks.

*** LIST OF ELABORATIVE THEORY QUESTION SUBJECTS**: 3 MH4 - 07 Manufacturing Process, 4 AN4 - 06 Aircraft Materials and Processes (Cr 3), 5 AN4 - 05 Aircraft System (Cr 3), 6 AN4 - 05 Avionics-I (Cr 3), 6 MH4 - 03 Applied Hydraulics & Pneumatics (Cr 3), 6 MH5 - 11 Principles of Management (Cr 3), 6 MH5 - 13 Aircraft Electronics System (Cr 3), 7 AN5 - 12 Maintenance of Airframe and System (Cr 3), 7 AN5 - 13 Helicopter Theory (Cr 3), 7 AG6 - 60.1 Human Engineering and Safety (Cr 3), 7 ST - 01 Avionics II (Special Theory Subject) (Cr 3), 7 MH5 - 11 Design of Mechatronics Systems (Cr 3), 7 MH5 - 12 Robotics and Machine Vision System (Cr 3), 7 MH6 - 13 Medical Electronics (Cr 3), 7 AN6 - 60.1 Aircraft Avionic System (Cr 3), 8 AN5 - 12 Maintenance of Power Plant and System

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(Cr 3), 8 AN5 - 13 Unmanned Aerial Vehicles & Systems (UAV) (Cr 3), 8 MH5 - 13 Product Development & Launching (Cr 3), 8 EC6 - 60.2 Robotics and control (Cr 3)

Instructions For Faculties

There should be total 6 Course Outcomes (COs) for each subject.

- Mid Term Question Papers are to be submitted as per Course Outcomes (COs) which should be divided equally in Part A, Part B and Part C according to Mid Term Examination and Credit Point.
- In Mid Term-1, the questions are to be given from CO1 and CO2. In Mid Term-2, the questions are to be given from CO3 and CO4. Similarly, in Mid Term-3, the questions are to be given from CO5 and CO6.
- **FACULTY MEMBERS, PLEASE ENSURE EXCEPT ABOVE LISTED SUBJECTS, NO THEORITICAL ELABORATIVE QUESTION SHOULD BE GIVEN IN PART 'C' OF QUESTION PAPER**

INSTRUCTION FOR STUDENTS

- **STUDENT IS ALLOWED TO ENTER LATE NOT MORE THAN 15 MIN AFTER STARTING OF EXAM,**

QUESTION PAPER & STUDENTS DETAILS

Type of Exam	Mid Term 2	**Date of Submission**	21/06/2021
Name of Faculty	Mr. R.N. Jha	**Date of Examination**	28/06/2021
Course	B.Tech (Mechatronics Engineering)	**Semester**	SEMESTER : 6
Batch	Fourth (4)	**Subject**	6 MH5 - 13 Aircraft Electronics System (Cr 3)-

COURSE OUTCOMES FOR REFERENCE TO FRAME QUESTION PAPERS
(Faculties are required to mention Course Outcome Number against each part of the question paper)

Course Outcome	3. To impart knowledge on construction and working principle of various airborne equipments. 4. To familiarize with basic inspections procedures, and equipments working.		
Email I'd	ramnareshjha@soaneemrana.org	**Phone No.**	769-093-4100
Student Name		**Student Reg No.**	

PART A

All the questions are compulsory to attend.

1. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.	CO 3
Question : 1	Name the functional elements of measuring instruments.

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9	Generalised configuration	Instrumentaion , measurement and analysis	
Question : 2	Describe the inductance type transducer for measuring relative displacement.		
10	Relative motion measuring devices	Instrumentaion , measurement and analysis	
Question : 3	Describe the absorption type torque measuring device.		
11	Measurement of Torque Absorption type	Instrumentaion , measurement and analysis	
Question : 4	Explain the construction of mechaniclly operated pressure gauge .		
12	Elastic pressure sensing elements	Aircraft Instruments (EHJ Pallett)	
Question : 5	Describe the construction and operation of tank unit capacitor of fuel quantity indicating system.		
13	Basic gauge system	Aircraft Instruments (EHJ Pallett)	
2. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 4
Question : 6	Explain the operation of vapoure pressure thermometer.		
14	Temperature measurement	Aircraft Instruments (C A Williams)	
Question : 7	Explain the opeation of magnetic compass.		
15	Magnetic compass.	Aircraft Instruments (EHJ Pallett)	
Question : 8	Explain head up display system.		
16	Head up display system.	Aircraft Instruments (EHJ Pallett)	
Question : 9	Explain the operation of acceleration sensor.		
17	Accelerometer	Aircraft Instruments (EHJ Pallett)	
Question : 10	Explain the operation of remote reading AC inductor type pressure transmitter.		
18	AC inductor type pressure transmitter	Aircraft Instruments (EHJ Pallett)	
PART B			

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FOR MIDTERM 1 - Part B: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).
FOR MIDTERM 2 - Part B: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).
FOR MIDTERM 3 - Part B: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

3. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 3
Question : 1	Explain the contruction and operation of simple altimeter		
19	Altimeter	Aircraft Instruments (EHJ Pallett)	
Question : 2	Explain the contruction and operation air speed indicator.		
20	Air speed indicator.	Aircraft Instruments (EHJ Pallett)	
Question : 3	Explain the oeration of servo operated exhaust gas temperature indicating system		
21	Servo operated indicator	Aircraft Instruments (EHJ Pallett)	
4. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 4
Question : 4	Explain the operation of pneumatically operated artificial horizon		
22	Artificial horizon	Aircraft Instruments (EHJ Pallett)	
Question : 5	Explain the operation of electrically operated turn and slip indicator.		
22	Turn and slip indicator	Aircraft Instruments (EHJ Pallett)	
Question : 6	Explain the erection mechanism of electrically operated directional gyroscope.		
22	Erection mechanism	Aircraft Instruments (EHJ Pallett)	
Question : 7 (Old Pattern)			

PART C

FOR MIDTERM 1 - Part C: Total number of questions to be given are six (3 from CO1 and 3 from CO2), out of which student must answer four (2 from CO1 and 2 from CO2).
FOR MIDTERM 2 - Part C: Total number of questions to be given are six (3 from CO3 and 3 from CO4), out of which student must answer four (2 from CO3 and 2 from CO4).
FOR MIDTERM 3 - Part C: Total number of questions to be given are six (3 from CO5 and 3 from CO6), out of which student has to answer four (2 from CO5 and 2 from CO6).

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5. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 3
Question : 1	Explain construction and operation of flux detector reamote reading compass.		
23	Reamote reading compass.	Aircraft Instruments (EHJ Pallett)	
Question : 2	Explain the operation of engine vibration indicating system.		
25	Engine vibration monitoring	Aircraft Instruments (EHJ Pallett)	
Question : 3	Explain the operation of stall warning system.		
25	Stall warning system.	Aircraft Instruments and integrated systems (EHJ Pallett)	
6. CHOOSE COURSE OUTCOME (CO) NUMBER ACCORDING TO THE TYPE OF MIDTERM, AS PER INSTRUCTIONS ABOVE.			CO 4
Question : 4	Explain the operation of altitude alerting system.		
19	altitude alerting system	Aircraft Instruments (EHJ Pallett)	
Question : 5	Explain the operation of ring laser gyro.		
17	Ring laser gyro.	Aircraft Instruments and integrated systems (EHJ Pallett)	
Question : 6	Explain the warning system of EICAS.		
24	EICAS	Aircraft Instruments and integrated systems (EHJ Pallett)	
Upload Scanned Document In Case of Numerical or Diagram For Any of The Above Questions. *(Mention question number with relevant fig / numerical / equations. Max 150 KB)*			
I have scrutinized the question paper. There is no spelling mistake or any type of irrelevant question.			