INTERNAL ASSESSMENT

SCHOOL OF AERONAUTICS, NEEMRANA

LIST OF SEMINAR TOPICS FOR SEMINAR CLASSES (BATCH 1) 2

Report must be submitted in spiral binding with C.D.

S No.	Reg.No.	Name of the Student	Topic	Sub- topics
1.	423	Vicky Kr. Singh	Role of DGCA – Airport Management	• Methodology followed by ATC & DGCA • Management of Bilaterals- Economic regulations • Various Airport Services • Rules & Regulation of DGCA • Safety & Maintenance of Airport • Human & Resource development • Airport Development Fees
2.	424	Jaspreet Singh	Airport Management	• History of Aviation • New Airport development plans • Airport planning • Comparison of Global & Indian Aviation management
3.	425	Manpreet Singh	Aircraft Performance	• Airplane performance in steady flight • Equation of motion • Power required • Power available • In Accelerated flight • Take off & landing • Steady climb & descent
4.	426	Raghuvendra Kumar	Wind Tunnel	• Introduction • Types of wind tunnel • Calibration process • Experimental parameters • Behavior of flow • Error & losses • Application in different areas • Future research & planning
5.	430	Chanakya Mishra	Fuselage Structure	• Introduction

				• Classification of fuselage • Semi monocoque • Monocoque • Truss type • Component of fuselage structure
6.	434	ShubhashishMondal 28/3	CAD/CAM (Use in Automation)	• Introduction • Software working on it(CATIA, AutoCAD, ANSYS) • Importance • Used in automation • advantages
7.	441	ShivamVerma 28/3	Heat treatment of metals	• Basic principles • Types of heat treatment • Heat treatment of Plain carbon steel • Heat treatment of Alloy steel • Heat treatment of Cast iron • Heat treatment of Non ferrous metals
8.	444	Sophia Sharma 28/3	Fly by Wire	• Introduction • History • Basic operation • Types • Application • Advantages • Further Development
9.	449	Navjot Joshi 29/3	Wind Tunnel	• Introduction • Types of wind tunnel • Calibration process • Experimental parameters • Behavior of flow • Error & losses • Application in different areas • Future research & planning
10.	451	SahilDhiman 29/3	External lighting	• Navigation light • Anticollision light • Landing light taxi light • Ice inspection lights
11.	456	Vibha 29/3	Aircraft Structure (Beams)	• Introduction • Types of fuselage

				• Contribution on fuselage • Modern fuselage structure • Beam • Fixed & continuous beam analysis • Beam contribution on A/C fuselage
12.	459	AbhishekRai 30/3	Cabin entertainment	• Flight display system • Passenger moving maps • WIFI LED monitors • Ipod docking station • DVD players • Inflight games
13.	464	Farooq Ahmad Bhat 30/3	Advanced Propulsion Systems	• Ram/ SCRAM Jets • Ionic propulsion • Electric propulsion • Hybrid engines • Pre-cooled engines • Latest technologies in propulsion systems
14.	467	PranavPramodKamble 30/3	Mounding Process	• Compression moulding • Transfer mouding • Injection moulding • Extrusion moulding • Blow moulding • Slush moulding • Ingredient of moulding components
15.	468	Vinay Kumar 31/3		
16.	473	Raushan Kumar 31/3	Aircraft structure (Fuselage and wing structure)	• Introduction • History on fuse & wing • New design and concept • Types of fuselage and wing • Application of diff. fuselage and wing
17.	474	PankajBishnoi 31/3	Rocket Propulsion	• Solid propellent • Liquid propellent • Hybrid propellent • Grain Design • Electric rocket • Multi stage rocket
18.	475	Manu Raj 1/4	Battery Installation	• Battery compartment • Battery installation • Ventating system

				• Operation of batteries
19.	483	Mayank Mishra 1/4	Heat Transfer	• Heat transfer process • Conduction • Convection • Radiation • Governing equations of each process • Parameters influencing these process
20.	485	ArushiChangia 1/4	Auxiliary system of Aircrafts	• Auxiliary system • Various types • Components & operation of air conditioning system • Pressurization system • Oxygen system • Deicing & Icing system • Fire protection system
21.	487	AshishVerma 4/4	Auxiliary power unit	• Ground power unit • Their operation and limitation • Application
22.	490	Rahul Agarwal 4/4	Avionics Instruments	• Instrument landing system • Tactical Air Navigation system • Traffic Alert • Avoidance & Collision system • Distance Measuring Equipments
23.	493	Bipin Kr. Yadav 4/4	Gas Turbine (Combustion process & design)	• Introduction to Combustion • Why Combustion required • Efficiency of Combustion • Condition of flame out • Combustion chamber • Design of Combustion chamber • Error occurs • Material required
24.	497	AbhishekGilhotra 5/4	Circuit protection	• Fuses (their materials) • Current limits • Circuit breakers

				• Over voltage protection • Under voltage protection • Over excited & under excited protection • Diffferent current protection • Merz price protection system
25.	498	AradhanaMathur 5/4	Antenna (Avionics)	• Electro magnetic waves • Basic definition • Uses & application • Types of Antenna • Working of Antenna • Early history • Use of Antenna in Aircrafts
26.	501	Suryapratap Singh 5/4	Aircraft Major Inspection	• Introduction • Importance of Inspection • Different types of Inspection • Major & Minor damage • Damage tolerance • Major & Minor defect • Defect reporting, rectification & investigation • Aircraft Rigging • Symmetry Checks
27.	502	AbhilashaAwasthi 6/4	Fluid Mechanics	• Bernouli's Theorem • Application of Venturi-meter • Application of Orifices meter • Application of Pilot tube
28.	504	Hitesh Kr. Tak 6/4	Aircraft performance in Accelerated flight	• Take off • Landing • Jet assisted take off • V-n diagram • Turning flight performance • Range & endurance • Steady climb & descent
29.	506	KomalTomar 6/4	Wind Tunnel	• Introduction of wind tunnel • Wind tunnel design • Types of wind tunnel

				• Testing inside the wind tunnel • Parameter affecting wind tunnel • Flow visualization in wind tunnel • Wind tunnel balances
30.	507	DivyaChauhan 7/4	Aircraft Materials	• Aluminium& its alloys • Types & its application • Properties • Casting • Heat treatment process
31.	509	Deepak Yadav 7/4	Transformer & Rectifiers	• Their principle • Construction of volt transformer • Circuit connection • Current transformer • Auto transformer • Transformer efficiency and rating
32.	513	UmangTyagi 7/4	AC Power Generation	• Principle, alternators, principle of Aircraft • D.C. Generator • Elimination of DC ripple • Residual Magnetism • Characteristics of DC Generator • Armature ckt and armature reaction
33.	518	RavvaharshaVardhan 8/4	Advanced future Aircrafts	• Advancement in materials • Advancement in structure • Advancement in Avionics • Advancement in Propulsion • Advancement in Travel • Drones • SCRAM/RAM Jet • Space travel • Micro air vehicles • Weapons (Missiles, Guided, Ballistic) • Artificial Intelligence
34.	521	Jeetendra Singh 8/4	Designing software(CATIA)	• Introduction of CATIA • Area of use

				• Basic modeling in CATIA • Various packages in CATIA • Complex design in CATIA
35.	527	NiteeshBhardwaj 8/4	Cascade system in vapor compression	• Meaning • Requirement • Description and examples • Application
36.	528	Chandan Kumar 15/4	Rapid prototype	• Introduction • Substractive processes • Additive process • Virtual prototyping • Applications
37.	529	Hari Haran T. 15/4	Vortex tube refrigeration	• Meaning • Requirement • Description and example • Applications
38.	530	Linu S Murali 15/4	Multistage vapor compression and expansion	• Complete descriptions and aspects • Intercooling and expansion process • Various types of such arrangements
39.	532	GobindRai Singh 15/4	Instrument Landing System	• Working & Application • Categories • Ground Installation • Airborne installation • Equipments required • Indications
40.	533	Digpriya ✓	Aerodyanmics Drags	• Drag (Introduction) • Aerodynamics forces • Types of Drags • Lift dependent Drag • Lift Independent Drag • Wave Drag • Effect of Drag on Aircraft • Minimization of Drag
41.	534	Tiny 18/4	Shock Waves	• Prandtlquation • Rankine – Hugonoit relation • Normal Shock waves • Pilot static tube • Flow past convex corners • Oblique Shock waves • Hodograph & pressure

				turning angles
42.	537	SafwanulHaque 18/4		
43.	538	Dikshant Jain 18/4	Materials of construction for cryogenic use	• Properties of such materials • Example of such material • Pros and cons of certain such materials in cryogenic construction application
44.	540	RajendraDhakkal 18/4	Cryogenics	• History and application • Meaning • Current application
45.	541	SouravSaini 19/4	Airplane Performance in Steady & level flight	• Equations of Motion in A/C • Variation of Drag with flights • Power required • Power available • Minimum diag& min. power condition • Gliding & Climbing
46.	542	SouravSuman 19/4	Thermo Dynamics	• Otto cycle • Carnot cycle • Atkinson cycle • Rankine cycle • Brayton cycle
47.	549	Ananta Kumar Bhoi 19/4	Why the vapor compression cycle	• Theoritical refrigeration cycle i.e. carnot cycle • Improvements of cornot cycle • Air as a refrigerant • Advantage of vapor compression refrigeration
48.	550	Dinkar Kumar 19/4	Composite Materials	• Strength to weight ratio • Classification • Particular composites • Fiberous composites • Manaufacturing of composites • Short fibre composite • Maintenance of composite
49.	553	Sunny Baghel 20/4	History of refrigeration	• Early requirement of cooling

				• Traditional methods of refrigeration and air conditioning
50.	554	AmitabhaGhosh 20/4	Storage and handling of cryogens	• Need for special methods of storage and handling • Various methods • Advantage and disadvantages of various mehods
51.	555	Abhishek Kumar 20/4	Dynamic Stability	• Dynamic untability modes • Directional Divergence • Tortional Divergence • Spiral Divergence • Dutch roll • Auto- rotation • Spin
52.	557	Ajay Ramteke 20/4	Plates of various shapes	• Equation of bending of plates in polar coordinates • Circular plates under a linearly varying • Circular plates under a concentrated load • Circular plates of non uniform thickness coordinates
53.	561	Amir Khan 20/4	Maintenance of Airframe and System Design	• Oxygen • Airconditioning • Pressurization • Importance • Application in Aircraft
54.	562	ArjooAdhikari 21/4	Airport infrastructure & Management	• Introduction • Airport Planning • Terminal planning design & operation • Airport operation • Airport function • Organization structure in an airline • Airport Authority of India
55.	696	S. Ganesh 21/4	Laws of Thermodynamics	• Zeroth law • First law • Second law

				• Carnot law • Entropy & Enthalpy • Internal energy • Kelvin plank &clausius inequality
56.	663	B.S. Jami Debbarma 21/4	Atmosphere	• International standard atmosphere • Geometrical &Geopotential altitude • Troposphere & Stratosphere • Lapse rate • Stability of atmosphere • Pressure altitude • Different kinds of airspeeds
57.	643	Rahul Poddar 21/4		•

LIST OF SEMINAR TOPICS FOR SEMINAR CLASSES (BATCH 2)

S no.	Reg no.	Name of the Student	Nam of the Topic	Sub topics
1.	429	Abhaykumar 30/3	Electronic emergency equipment requirement	• ELT • Flight recorder • Voice recorder • Smoke detector
2.	436	Subhamjain ~~30/3~~ 30/3	Thermo electric refrigeration	• Meaning • Requirement • Description and example • Applications
3.	448	JugalKishordimri 1/4	Fluid Mechanics	• Bernouli's Theorem • Application of Venturi-meter • Application of Orifices meter • Application of Pilot tube
4.	458	Rajankumarkannaujia 1/4	Instrument Landing	• Working & Application

			System	• Categories • Ground Installation • Airborne installation • Equipments required • Indications
5.	469	Vikasrangar 1/4	Fly by Wire	• Introduction • History • Basic operation • Types • Application • Advantages • Further Development
6.	470	Sadabahmad 1/4	Thermo Dynamics	• Otto cycle • Carnot cycle • Atkinson cycle • Rankine cycle • Brayton cycle
7.	472	Ashishgupta 1/4	Composite Materials	• Strength to weight ratio • Classification • Particular composites • Fiberous composites • Manaufacturing of composites • Short fibre composite • Maintenance of composite
8.	476	Gurmilansinghkainth 1/4	Materials of construction for cryogenic use	• Properties of such materials • Example of such material • Pros and cons of certain such materials in cryogenic construction application
9.	477	Rajatkumar guru 6/4	Airport infrastructure & Management	• Introduction • Airport Planning • Terminal planning design & operation • Airport operation • Airport function • Organization structure in an airline • Airport Authority of India
10.	480	Krishankumar 6/4	Rocket Propulsion	• Solid propellent • Liquid propellent • Hybrid propellent

				• Grain Design • Electric rocket • Multi stage rocket
11.	489	Krishankantsingh R. 6/4	Aircraft Performance	• Airplane performance in steady flight • Equation of motion • Power required • Power available • In Accelerated flight • Take off & landing • Steady climb & descent
12.	499	Rameshwargurjar 6/4	Aircraft performance in Accelerated flight	• Take off • Landing • Jet assisted take off • V-n diagram • Turning flight performance • Range & endurance • Steady climb & descent
13.	500	Sonnupeepliwal 8/4	Internal and External lighting	• Cockpit lighting • Integral light • Pillar and bridge • Flood lighting • Electro luminescent
14.	503	Dayama Deepak mukund 8/4	Aerodyanmics Drags	• Drag (Introduction) • Aerodynamics forces • Types of Drags • Lift dependent Drag • Lift Independent Drag • Wave Drag • Effect of Drag on Aircraft • Minimization of Drag
15.	510	Kapilgupta 8/4	AC Power Generation	• Principle, alternators, principle of Aircraft • D.C. Generator • Elimination of DC ripple • Residual Magnetism • Characteristics of DC Generator • Armature ckt and armature reaction
16.	511	Dharampalchoudhary 8/4	Antenna (Avionics)	• Electro magnetic waves • Basic definition • Uses & application • Types of Antenna • Working of Antenna

				• Early history • Use of Antenna in Aircrafts
17.	514	Nand Kishore dhaker 15/4	Airplane Performance in Steady & level flight	• Equations of Motion in A/C • Variation of Drag with flights • Power required • Power available • Minimum diag& min. power condition • Gliding & Climbing
18.	515	Tulseramgurjar 15/4	Rapid prototype	• Introduction • Substractive processes • Additive process • Virtual prototyping • Applications
19.	526	Sujeetbiswas 15/4	Gas Turbine (Combustion process & design)	• Introduction to Combustion • Why Combustion required • Efficiency of Combustion • Condition of flame out • Combustion chamber • Design of Combustion chamber • Error occurs • Material required
20.	545	Rupeshkumar 15/4	Airport Management	• History of Aviation • New Airport development plans • Airport planning • Comparison of Global & Indian Aviation management
21.	548	Himanshukhare 20/4	CAD/CAM (Use in Automation)	• Introduction • Software working on it(CATIA, AutoCAD, ANSYS) • Importance • Used in automation • Advantages
22.	551	Om prakashkumar 20/4	Dynamic Stability	• Dynamic untability modes • Directional Divergence • Tortional Divergence

				• Spiral Divergence • Dutch roll • Auto- rotation • Spin
23.	552	Ujjawal 20/4	Cascade system in vapor compression	• Meaning • Requirement • Description and examples • Application
24.	670	Rakeshkumar 20/4	Maintenance of Airframe and System Design	• Oxygen • Airconditioning • Pressurization • Importance • Application in Aircraft
25.	699	Md. Saboor 20/4	Heat treatment of metals	• Basic principles • Types of heat treatment • Heat treatment of Plain carbon steel • Heat treatment of Alloy steel • Heat treatment of Cast iron • Heat treatment of Non ferrous metals