**Physics of atmosphere**

1. The layer of atmosphere where temperature gradually falls **a. Troposphere** b. Stratosphere c. Tropopause

Ref:A C Kermode

2. The lapse rate in the stratosphere region a. 6.5 k/feet **b. 0 k/feet** c. 5 k/feet

Ref:A C Kermode

3. The amount of air in the atmosphere apply----------at the top surface a. Force b. Weight **c. Pressure**

Ref:A C Kermode

4. Which of the following flight operation is not depends on density?**a. Rocket** b. Parachute c. Kite

Ref:A C Kermode

5. Density of air at sea level a. 1.035 kg/m3**b. 1.225 kg/m3**c. 1.205 kg/m3

Ref:A C Kermode

6. Density is defined as a. Weight/volume

**b. Mass/volume** c. None of the above

Ref:A C Kermode

7. Temperature at sea level is**a. 288K**b. 273Kc. 173K

Ref:A C Kermode

8. The portion of atmosphere below which layer changes in temperature takes place**a. Troposphere**b. Stratospherec. tropopause

Ref:A C Kermode

9. Coefficient of viscosity is defined asa. Ratio of velocity to drag**b. Ratio of viscous stress to velocity gradient**c. Ratio of viscosity to the friction

Ref:A C Kermode

10. The temperature variation near earth surfacea. Smaller **b. Greater**c. No change

Ref:A C Kermode

11. Viscosity coefficient a. decreases with altitudeb. (a)+ constant in tropopause**c. (b)+ increases in stratosphere**d. (a)+ constant in stratosphereRef:A C Kermode

12. What are the flow properties considered in ISAa. Temperature, pressure**b. Temperature, Pressure, Density**c. Temperature, Density

Ref:A C Kermode

13. ISA sea level temperature is**a. 150C** b. 450C. c. 180C

Ref:A C Kermode

14. The property of air which makes all flight possiblea. Viscosityb. Pressure**c. Density**

Ref:A C Kermode

15. Below which layer temperature decrease rapidlya. Troposphere**b. Stratosphere**c. tropopause

Ref:A C Kermode

16. Mean sea level pressurea. 1013.3 mbb. 101.325 KN/m2**c. Both a and b**

Ref:A C Kermode

17. What is the purpose of making ISAa. For identification

**b. For making standardization for measurement**c. None of the above

Ref:A C Kermode

18. Aircraft performance’s vital component**a. Density**b. Pressure

c. Velocity

Ref:A C Kermode

19. As altitude increase thena. TAS decrease than IAS**b. TAS greater than IAS**c. Both are same

Ref:A C Kermode

20. IAS includes a. Pressure only b. Temperature and density **c. Pressure, temperature and density**

Ref:A C Kermode

21. The portion of the atmosphere below the height at which the change occurs **a. Troposphere**b. Stratospherec. Mesosphere

Ref:A C Kermode

22. Viscosity coefficient a. Varies with density b. Varies with friction **c. Varies with wind gradient**

Ref:A C Kermode

23. The rate at which the pressure decreases is much \_\_\_\_\_\_\_\_\_\_ near the earth’s surface than at altitude.a. Smaller**b. Greater**c. Constant

Ref:A C Kermode

24. For normal temperature a. Humid air is denser than dry air**b. Dry air is denser than humid air**c. Both are equal

Ref:A C Kermode

25. When some pressure is acted on any surface then what actually actinga. Pressure**b. Force**c. Inertia

Ref:A C Kermode

26. In atmosphere a mixture of gases nitrogen and oxygen in the proportion of approximately**a. Four - fifth nitrogen to one - fifth oxygen**b. One - fifth nitrogen to four - fifth oxygenc. Both are equal

Ref:A C Kermode

27. Due to viscosity and wind velocity gradually\_\_\_\_\_\_\_\_\_\_\_ from the ground upwardsa. Decreases **b. Increases**c. Constant

Ref:A C Kermode

28. Pressure measuring instrument**a. Barometer**b. Ammeterc. Hygrometer

Ref:A C Kermode

29. Dynamic pressure is the a. Pressure of the surrounding medium such as fluid or a gas which comes into contact with the object**b. Pressure as the result of the velocity through a fluid or gas**c. Pressure of the atmosphere at the altitude at which aircraft is flying

Ref:A C Kermode

30. The mass of a cubic meter of air at ground level is roughlya. 1.32 kgb. 1.67 kg**c. 1.225 kg**

Ref:A C Kermode

31. Lapse rate at 1000M isa. 1.98 degree Cb. -5.6 degree C**c. -6.5 degree C**

Ref:A C Kermode

32. Lapse rate at 1000ft is**a. 1.98 degree C**b. -5.6 degree Cc. -6.5 degree C

Ref:A C Kermode

33. According to ISA at sea level temperature ,pressure & Densitya. 2370C, 1.1013mbar, 1.225kg/m2b. 2370C, 101.3N/m2, 1.225kg/m2**c. 2370C, 1.013x105 N/m2 , 1.225kg/m3**Ref:A C Kermode

34. Fluid can be defined as a. Does not get affected by shear forceb. remain stable by the application of shear load**c. Will expand until it fills the container**

Ref:A C Kermode

35. In static fluid**a. Normal stress will act**b. Pressure is zeroc. Viscosity is nilRef:A C Kermode

36. The characteristics of dry air at constant temperature & pressure**a. Greater density than humid air**b. Less density than humid airc. Same as humid air

Ref:A C Kermode

37. Ideal fluid or In viscid flowa. Shear force will act**b. Viscosity is zero**c. It will deform under applied shear stress

Ref:A C Kermode

38. Fluid is a substancea. It cannot deform under an applied stress**b. It cannot resist any shear force applied to them**c. Viscosity will be the nil

Ref:A C Kermode

39. Pressure is a**a. Scalar quantity**b. Vector Quantityc. Both

Ref:A C Kermode

40. Temperature is a

**a. Scalar quantity**

b. Vector Quantity

c. Both

Ref:A C Kermode

**Basic Aerodynamics**

1. The drag which is inversely proportional to square of velocity a. Parasite drag **b. Induced drag** c. Infinite drag

Ref:A C Kermode

2. Aileron provide which control a. Longitudinal **b. Roll** c. Pitch

Ref:A C Kermode

3. If an aircraft having infinite aspect ratio then it will not be subjected to a. Wingtip vortices **b. Wingtip vortices and induced drag** c. Induced drag

Ref:A C Kermode

4. The aileron control is used to provide control around **a. Lateral control in longitudinal plane** b. Longitudinal control in lateral plane c. Both

Ref:A C Kermode

5. In streamline, the air a. The air is flow parallel to the main center line **b. Pressure drop is uniform** c. Velocity will be equal at each place

Ref:A C Kermode

6. At high speed the induced drag **a. Less than 10% of total drag** b. Less than 25% of total drag c. More than 25% of total drag

Ref:A C Kermode

7. If the aspect ratio ---------------, the induced drag will be halved **a. Doubled** b. Halved c. Not affected

Ref:A C Kermode

8. The point at which laminar flow is changed to turbulent is **a. Transition point/bubble point** b. Turbulent flow c. None of the above

Ref:A C Kermode

9. The increase of angle of incidence from root to tip **a. Wash in** b. Wash out c. Both

Ref:A C Kermode

10. The angle between chord line and relative air flow is a. Angle of incidence **b. Angle of attack** c. Longitudinal dihedral

Ref:A C Kermode

11. The straight line which goes from the leading edge of the wing to the trailing edge is called a. Camber line **b. Chord line** c. Angle of attack

Ref:A C Kermode

12. The layer of air over the surface of an airfoil which is slower moving in relation to the rest of the airflow is known as a. Camber b. Chord **c. Boundary layer**

Ref:A C Kermode

13. If aspect ratio is higher than induced drag is

**a. More than 40%** b. More than 75%c. Infinite

Ref:A C Kermode

14. If induced drag is reduced a. Span must be remains sameb. Span must be reduced **c. Aspect ratio must be higher**

Ref:A C Kermode

15. MTCS-higher Reynolds number**a. Supersonic – turbojet engine**b. Subsonic – aircraftsc. None of the above

Ref:A C Kermode

16. On a delta wing aircraft lift **a. Increases with increase in angle of attack**b. Decrease with increase in angle of attackc. None of the above

Ref:A C Kermode

17. Induced drag is a part of **a. Lift**b. Weightc. Thrust

Ref:A C Kermode

18. The drag is caused by the separation of the boundary layer **a. Form drag**b. Induced dragc. Interference drag

Ref:A C Kermode

19. NACA 0009 airfoil is having a. More camberb. Less camber**c. No camber**

Ref:A C Kermode

20. Factors of drag primarily depends ona. Speed of airflow over the wing and other parts**b. The interference between different parts of A/C and airflow**c. None of the above

Ref:A C Kermode

21. Density is defined asa. Weight / Volumeb. Volume / mass**c. Mass / Volume**

Ref:A C Kermode

22. With greater aspect ratio ------------ will be reduceda. Profile drag **b. Induced drag**c. Both a and b

Ref:A C Kermode

23. Induced drag is not taken into consideration in**a. High speed**b. Medium speedc. Low speed

Ref:A C Kermode

24. With greater aspect ratio ------------ will be reduceda. Profile drag **b. Induced drag**c. Both a and b

Ref:A C Kermode

25. When the AOA increases to the angle of maximum lift this is known asa. Stalling angleb. Critical angle**c. Both**

Ref:A C Kermode

26. Rudder provides**a. Directional stability**b. Lateral stabilityc. Longitudinal stability

Ref:A C Kermode

27. An Ideal airfoil hasa. High maximum lift coefficientb. Good lift/drag ratio**c. Both a and b**

Ref:A C Kermode

28. Efficiency of airfoil is**a. Lift over drag**b. Drag over liftc. Weight over thrust

Ref:A C Kermode

29. The point of intersection of the resultant force line of the airfoil is called the a. Chord lineb. Camber line

**c. Center of pressure**

**Ref:A C Kermode**

30. When flap will extenda. Stalling angle is increased**b. Stalling angle is decreased** c. Remains same

Ref:A C Kermode

31. Aileron gives --------- control**a. Roll**b. Yawc. Pitch

Ref:A C Kermode

32. If center of gravity of aircraft is forward of center of pressure than nose of aircraft will**a. Drop** b. Risec. It depends on distance between CP and CG

Ref:A C Kermode

33. The Newton’s law of mechanism that is applicable to aira. 1st law & 2nd lawb. 1st law & 2nd law**c. 1st law & 2nd law & 3rd law**

Ref:A C Kermode

34. The point on a wing surface where boundary layer startsa. Trailing edge**b. Leading edge**c. Transition point

Ref:A C Kermode

35. An airfoil stalls at a a. Certain Angle and certain speed**b. Certain Angle and not a certain speed**c. Not a certain Angle and certain speed

Ref:A C Kermode

36. Mark the correct statementa. Centre of pressure is the point on chord of wings from where drag force acts**b. Centre of pressure is the point on chord of wings from where lift force acts**c. Centre of pressure is the point on chord of wings from where weight force acts

Ref:A C Kermode

37. Which of the following is profile drag**a. Skin friction drag**b. Induced dragc. Wave drag

Ref:A C Kermode

38. The movement of center of pressure is independent froma. Liftb. Drag**c. Weight**

Ref:A C Kermode

39. An ideal airfoil hasa. High max CLb. Low minimum CD**c. Both (a) & (b)**

Ref:A C Kermode

40. Which control surface provide pith control**a. Elevator**b. Aileron

c. Flaps

Ref:A C Kermode

41. Induced drag is affected due to**a. Lift**b. Dragc. Climb

Ref:A C Kermode

42. As long as you have lift, you havea. Skin friction drag**b. Induced drag**c. Wave drag

Ref:A C Kermode

43. Law applicable for equilibrium flight is**a. Newton 1st law**b. Newton 2nd lawc.

c. Newton 3rd law

Ref:A C Kermode

44. Elevator control**a. Pitch**b. Directionalc. Roll

Ref:A C Kermode

45. As AOA increases**a. C of P moves forward** b. C of P moves rearwardsc. Remains constant

Ref:A C Kermode

46. Lift of an aircraft produced more due toa. increase in pressure on the upper surface **b. Increase in pressure on lower surface.**c. Decrease pressure on lower surface

Ref:A C Kermode

47. Characteristics of airfoil depends ona. Airflow

**b. Curvature**c. Angle

Ref:A C Kermode

48. High thickness of the airfoil at the leading edge, what happens to the stall characteristics?**a. poor**b. Goodc. Excellent

Ref:A C Kermode

49. Reynolds number **a. Is applicable to supersonic aircrafts**b. Is applicable to continuous flowc. Both a and b

Ref:A C Kermode

50. Movement of center of pressure is affected bya. Centre of gravity**b. Angle of attack**c. Centre of drag

Ref:A C Kermode

51. When slat is extended the max CL of the aerofoil may be increasing by as much as a. 20 %. b. 40 %. **c. 60 %**

Ref:A C Kermode

52. Angle of airfoil is slightly negative will it generate lifta. Do not generate lift**b. May be generate lift**c. None

Ref:A C Kermode

53. At constant AOA, if density increases then L/D ratioa. Increases b. Decreases **c. Remains constant**

Ref:A C Kermode

54. Wave drag is generally produced at a. Subsonic & Sonic Speed**b. Transonic & Supersonic Speed**c. Hypersonic Speed

Ref:A C Kermode

55. On a swept wing aircraft if both wing tip loses lift simultaneously the aircraft willa. Roll**b. Pitch nose up**c. Pitch nose down

Ref:A C Kermode

56. The increase in kinetic energy due to increase in velocity is accompanied by a corresponding decrease in**a. Static pressure**b. Dynamic Pressurec. Stagnation Pressure

Ref:A C Kermode

57. The geometric features of an airfoil section area. The camber of the center lineb. The position of maximum camberc. The radius of curvature of the leading edge**d. All the above**

Ref:A C Kermode

58. Krueger flap is a **a. Leading edge flap**b. Trailing edge flapc. Leading edge slat

Ref:A C Kermode

59. Stagnation pressure **a. Static + dynamic**b. Staticc. Dynamic

Ref:A C Kermode

60. The value of the dynamic pressure and hence the indicated speed at which this occurs will always be the \_\_\_\_\_\_\_ whatever the height.a. Increasesb. Decreases**c. Same**

Ref:A C Kermode

61. Smooth surface encourages **a. Laminar flow**b. Boundary layerc. Homogeneous layer

Ref:A C Kermode

62. Airfoil with maximum camber well forward at leading edge will have\_\_\_\_\_\_\_\_\_\_\_ stall characteristics.**a. Poor**b. Goodc. Excellent

Ref:A C Kermode

63. The streamline shapes which have given the least resistance at subsonic speeds have had a **a. fineness ratio**b. pressure ratioc. aspect ratio

Ref:A C Kermode

64. A laminar boundary layer over the boundary layer over the whole surface of a wing the skin friction would be reduced to about\_\_\_\_\_\_\_\_\_\_ of its value.**a. One - tenth**b. One - thirdc. One - fourth

Ref:A C Kermode

65. The turbulent layer has a much degree of shear at the surface and it is this which causes the skin fiction to be much\_\_\_\_\_\_\_\_\_\_\_that it is for the laminar boundary layer.a. Smaller**b. Higher**c. Same

Ref:A C Kermode

66. Drag coefficient of a body is dependent ona. The shape of the bodyb. The square of the velocityc. The density of the air**d. All the above**

Ref:A C Kermode

67. In subsonic speed the air is a. Compressible**b. Incompressible**c. None

Ref:A C Kermode

68. In supersonic speed the air is **a. Compressible**b. Incompressiblec. None

Ref:A C Kermode

69. The angle between the chord of the aerofoil and some fixed datum line in the aeroplanea. Angle of attack**b. Riggers angle of incidence**c. Longitudinal dihedral angle

Ref:A C Kermode

70. The upper surface by means of its decreased pressure which provides the **a. Four – fifth of lift**b. Three – fifth of liftc. Two – fifth of lift

Ref:A C Kermode

71. The component has hardly any effect on the position of the center of pressurea. Lift**b. Drag**c. Weight

Ref:A C Kermode

72. In flat plate an increase of the angle of attack over the same angles causes the center of pressure to movea. Forward**b. Backward**c. Remains same

Ref:A C Kermode

73. The pitching moment is positive when it tends to push the nose **a. Upwards** b. Downwardsc. Constant

Ref:A C Kermode

74. Relation between CL& AOA**a. Directly proportional**b. Inversely proportionalc. None

Ref:A C Kermode

75. L/D ratio increases very rapidly up to abouta. 00 **b. 30 or 40**c. 150

Ref:A C Kermode

76.The L/D ratio increases very rapidly up to 3 or 4 degree at which angles the lift is nearly a. 20 times the drag**b. 24 times the drag**c. 10 times the drag

Ref:A C Kermode

77.At subsonic speeds the aerodynamic center is usually abouta. One – fourth of the chord from LEb. Two – third of the chord from LE**c. One – Quarter of the chord from LE**

Ref:A C Kermode

78.NACA 4412 isa. Symmetrical airfoil**b. Unsymmetrical airfoil**c. None

Ref:A C Kermode

79.Aspect ratio for flight at subsonic speeds vary from **a. 6 to 1 up to about 10 to 1**b. 4 to 1 up to about 6 to 1c. 2 to 1 up to about 5 to 1

Ref:A C Kermode

80.While take off induced drag is a. 20 % of total dragb. 50 % of total drag**c. 70 % of total drag**

Ref:A C Kermode

81.When slat will extenda. Stalling angle is decreased **b. Stalling angle is increased**c. Remains same

Ref:A C Kermode

82. Lines which show the direction of the flow of the fluid at any particular moment are calleda. Line of zero lift**b. Streamlines**c. Chord line

Ref:A C Kermode

83. Speed of sound in gas**a. Directly proportional to temperature**b. Inversely proportional to temperaturec. No relation

Ref:A C Kermode

84. The camber convex of airfoil in upper surface isa. Smaller**b. Greater**c. Same

Ref:A C Kermode

85. As velocity increases transition point on wing will moves**a. Towards leading edge**b. Towards trailing edgec. No effect

Ref:A C Kermode

86. The purpose of slat a. To increase drag**b. To re-energize boundary layer**c. To decrease stalling angle

Ref:A C Kermode

87. Fixed slat at high speed will givea. Less drag**b. More drag**

c. No change

Ref:A C Kermode

88. Camber & split flap will givea. Increases in Max CLb. Increases in Drag**c. Both**

Ref:A C Kermode

89. Blown & jet flaps may be a serious disadvantage in the event of a. Divingb. Climbing**c. Power failure**

Ref:A C Kermode

90. Reynolds number is the ratio of **a. Inertia force to viscous force**b. Elastic to viscous forcec. Elastic to inertia force

Ref:A C Kermode

91. If Reynolds number is increasing the flow will bea. Laminar**b. Turbulent**c. Transition

Ref:A C Kermode

92. If density is increasing the Reynolds number will be**a. Increasing**b. Decreasing c. Remains same

Ref:A C Kermode

93. If viscosity is increasing the Reynolds number will bea. Increasing**b. Decreasing** c. Remains same

Ref:A C Kermode

94. Airfoil with max camber well forward say at 15% to 20% of the chord may have**a. Low drag**b. High dragc. No drag

Ref:A C Kermode

95. There must be some point on the chord about which there is no change

in pitching moment is calleda. Line of zero lift**b. Aerodynamic center**c. Stagnation point

Ref:A C Kermode

96. The concept of thrust is explained bya. Newton’s 1st law b. Newton’s2nd law**c. Newton’s 3rd law**

Ref:A C Kermode

**Theory of Flight**

1. Landing speed is\_\_\_\_\_\_\_\_ when flap & slat is opena. Increasing**b. Decreasing**c. No change

2. When banking on a turn stalling speed is \_\_\_\_\_\_\_\_\_ then when landing

(Ref-ACK 190)a. lower**b. higher**c. Same

3. The increase in lift tends to \_\_\_\_\_\_\_ the glide angle

(Ref-ACK 209)**a. Flatten**b. Steepenc. Remains same4. The steeper the original glide the greater the change in flight path involved and so the more speed must be there in hand for\_\_\_\_\_

(Ref-ACK 209)a. Divingb. Landing**c. Flattening out**5. After Flattening out we must lose any excess speed this may called\_\_\_\_\_\_\_

(Ref-ACK 209)a. Float

b. Hold-off**c. Both**6. The gliding path is flatter so there is \_\_\_\_\_\_\_\_ change of path in flattening out and so(Ref-ACK 211)**a. Less**b. Morec. Same

7. In straight and level flight when cruising power required curve and power available curve are perpendicular is a. Safety range **b. Endurance range** c. Both 8. During turn the outer wing offers more(Ref-ACK 224)a. Drag**b. Lift**c. Bank9. When engine failure occurs and lift is forward of the weight then**a. Aircraft tends to stall**b. It gives position of glidingc. Slightly reduces straight and level flight10. Higher weight in gliding flight is not affected not by(Ref-ACK 185)**a. Stalling angle and range are reduced**b. Stalling angle and speed are reducedc. Speed and range are reduced11. During flat turn(Ref-ACK 245)a. Roll only**b. Yaw only**c. Combination of roll & yaw12. In the case of aircraft nose drop thrust line is placed----------and drag line is---------(Ref-ACK 149)**a. High ; low**b. High ; highc. Low ; high13. During turn stalling angle a. Increases b. Decreases**c. Remains same** 14. During take-off before pulling off(Ref-ACK 215)a. AOA is less than stalling angle**b. To allow speed to increase beyond the stalling speed**c. AOA is more than 25015. Speed of sound at mean sea levela. 320m/s**b. 340m/s**c. 300m/s16. Performance capability of jet engine with propeller is depends on(Ref-ACK 130)**a. Power**b. Thrustc. Both17. Performance capability of jet engine is depends on (Ref-ACK 130)**a. Thrust**b. powerc. Both18. If landing speeds go up with\_\_\_\_\_\_\_\_\_ Wing loading(Ref-ACK 216)a. Low**b. High**c. Same 19. A slight increase in the \_\_\_\_\_\_\_\_\_ to use for climbing(Ref-ACK 226)a. AOA**b. Best speed**c. Trim20. For equilibrium level flight (Ref-ACK 148)a. L = Wb. T = D**c. Both a and b**21. The airspeed during a spin is comparatively low and the rate of descent is also(Ref-ACK 248)**a. Low**b. Highc. Same22. Propeller convert------------- into -----------(Ref-ACK 131)a. Thrust, torque**b. Torque, thrust**c. Thrust, power23. In straight and level flight we must prevent aircraft from(Ref-ACK 149)a. Climbing**b. Rotating**c. Diving24. Rate of climb with respect to altitude(Ref-ACK 224)a. ROC increases with increase in altitude**b. ROC decreases with increase in altitude**c. None of the above25. What changes an even and straight flight?(Ref-ACK 149)**a. Rotation** b. Divingc. Climbing26. During gliding turn the aircraft rolls(Ref-ACK 224)**a. Inward**b. Outwardc. None of the above27. Climb performance is related to**a. Performance curve** b. Lift curvec. Drag curve28. Except in special cases it is unadvisable toa. Trim**b. Flat out**c. Dive

29. During climbing turn the aircraft will roll(Ref-ACK 244)a. Inwards **b. Outwards** c. None of the above30. If we increase or decrease the best gliding speed, the flight path will(Ref-ACK 182)a. Flatter**b. Steeper**c. 20 to3031.The speed of sound is roughly \_\_\_\_\_\_\_\_\_ times the speed of sound in air (Ref-ACK 487)a. Two

b. Three

**c. Four**32. Distance travelled by aircraft per unit fuel is**a. Air specific range**b. Specific fuel consumption

c. None33. The weight of an aircraft is acting at which point **a. C of G**b. C of P c. Aerodynamic center34. During climb which of the following curve should be consider?(Ref-ACK 218)a. V-N curve **b. Performance curve** c. Only a 35. In steeper turn rudder position is taken by (Ref-ACK 245)**a. Elevator**

b. Rudderc. Aileron 36. If CP of an aircraft is behind CG, what happened to the nose?**a. Drops** b. Pitch upc. Remains same 37. During climbing a. Lift is greater than weight (Ref-ACK 229 & 485)**b. Lift is less than weight** c. Lift is equal to weight 38. The flight Mach no at which local supersonic flow first appears somewhere on the aircraft is (Ref-ACK 488)a. Subsonic

**b. Transonic**c. Sonic39. During takeoff preferably aircraft will go(Ref-ACK 216)**a. Against the wind**b. Along with windc. None of the above40. The ratio ofInertial to elastic force is called a. Reynolds nob. Euler’s no**c. Mach no** 41. Centre of drag is(Ref-ACK 148)a. Aircraft speed**b. Actual position depends on the relative resistance of different parts of airplane**c. None of the above42. The effects of an increase of altitude(Ref-ACK 226)a. Slight reduction in minimum speed

b. Increase in maximum speed**c. Large reduction in rate of climb**d. All the above43. At steady level flight lift is equal to(Ref-ACK 148)a. Thrustb. Drag**c. Weight**44. During climbing turn lift on a inner wing is (Ref-ACK 224)a. More**b. Less**c. Same45. As weight of aircraft increases, lift has to be increased by increasing?**a. AOA**b. Velocityc. Drag46. In an ordinary turn the inward centripetal force is provided by the aero plane(Ref-ACK 236)

a. Climbingb. Gliding**c. Banking**47. Sharp leading edges are used in supersonic wings to reduce the (Ref-ACK 488)a. Lift **b. Drag** c. Weight48. If we increase or decrease the best angle which gives L/D the path of descent will be(Ref-ACK 182)a. Flatter**b. Steeper**c. Same49. If the aircraft will glide along the wind the path of descent will be(Ref-ACK 184)**a. Flatter**b. Steeperc. Same50. Expansion wave in supersonic flow is a region where the speed will (Ref-ACK 488)**a. Increase** b. Decrease

c. Constant51. If wing loading is increasing then stalling speed will be(Ref-ACK 193)**a. Increasing**b. Decreasingc. Remains the same52. The tail plane can produce lift in either the +ve or –ve in order to produce the required moment for(Ref-ACK 151)a. Pitch up**b. Trim**c. Pith down53. At lower altitude power required is (Ref-ACK 223)**a. Less**b. Morec. No change54. Service Ceiling is the height at which rate of climb becomes(Ref-ACK 225)**a. Less than 0.5m/s**b. More than 0.5m/sc. Constant55. The aero plane may travel upwards or downwards along the normal axis as in(Ref-ACK 230)a. Climbingb. Descending**c. Both** 56. The Aero plane may travel to right or left along the lateral axis such motion is called(Ref-ACK 230)a. Side slippingb. Skidding

**c. Both**57. In climbing turn necessity for holding off bank is (Ref-ACK 243)**a. More**b. Less

c. No Required58. Dutch roll a. Only Yaw

b. Only Roll**c. Combination of Yaw & Roll**59. The propeller torque and engine torque will be exactly (Ref-ACK 131)a. Same **b. Equal and opposite**c. None60. The ratio of the useful work given out by the propeller to the work put into it by the engine is(Ref-ACK 138)a. Work done**b. Efficiency**c. Power61. Movement of the center of gravity during flight caused, for instance, by(Ref-ACK 149)a. Consumption of fuelb. Movement of passengers**c. Both a and b**62. The angle of attack or the attitude of the aero plane to the air is the same in level flight at all heights, provided the IAS(Ref-ACK 166)a. Increases b. Decreases **c. Remains same**63. The less the total weight of the aircraft, the indicated airspeed will be(Ref-ACK 167)a. More**b. Less**c. Same64. L/D is Maximum and drag will be(Ref-ACK 169)**a. Least**b. Maximumc. No change65. The angle of attack that gives the best L/D ratio will be the same at whatever the (Ref-ACK 169)a. Heightb. Weight**c. Both a and b**66. The drag is the same at the same \_\_\_\_\_\_\_\_\_ at all heights(Ref-ACK 171)**a. IAS**b. TASc. None67. The higher we go, the greater is the\_\_\_\_\_\_\_\_\_ for the same (Ref-ACK 172)**a. TAS**b. Dragc. Weight68. The higher we go, the greater is the TAS and therefore the greater the (Ref-ACK 172)a. Power Available**b. Power required**c. Drag69. To get maximum endurance we must use the(Ref-ACK 173)a. Maximum power**b. Minimum power**c. Same power70. If the aircraft will glide against the wind the path of descent will be(Ref-ACK 184)a. Flatter**b. Steeper**c. Same71. When banking on a turn the lift on the wings must be greater than the(Ref-ACK 190)a. stalling speed**b. weight**c. None72. The increase in drag tends to steepen the (Ref-ACK 209)a. Gliding angle b. Gliding attitude**c. Both**73. Wherever the power available curve is \_\_\_\_\_\_\_\_\_ the power required curve, level flight is possible**a. Above**b. Belowc. Same74. The power available to \_\_\_\_\_\_\_\_\_ with altitude**a. Decreases**b. Increasesc. Same75. The power required to \_\_\_\_\_\_\_\_\_ with altitudea. Decreases**b. Increases**c. Same76. TAS for the best rate of climb \_\_\_\_\_\_\_\_\_ with height**a. Increases**b. Decreasesc. Remains same77. The greater the centripetal acceleration required, the higher will be the (Ref-ACK 236)a. Stalling Angle**b. Stalling Speed**c. None of the above78. Increase in velocity needs an \_\_\_\_\_\_\_\_\_\_\_ in the angle of bank(Ref-ACK 239)**a. Increase**b. Decreasec. Remains same79. The radius of the turn is increased the angle of bank may be(Ref-ACK 246)**a. Increased**b. Reducedc. Remains same80. Steep turns can only be accomplished if the engine is powerful enough to keep the aeroplane travelling at(Ref-ACK 241)a. High speed and low angles of attackb. High speed and large angles of attack**c. High speed and large angles of attack even at stalling angle**81. Modern aircraft have a small side surface and if this coupled with\_\_\_\_\_\_\_\_ directional stability(Ref-ACK 245)a. Poor **b. Good** c. None82. The radius of turn can be reduced as the angle of bank is\_\_\_\_\_\_\_\_\_(Ref-ACK 239)**a. Increased**b. Decreasedc. Remains the same

83. \_\_\_\_\_\_\_\_\_\_ is very rarely performed in practice(Ref-ACK 251)a. Flat Dive**b. Steep dive**c. Both84. Maximum climb speed of aircraft a. Increases with altitude**b. Decreases with altitude**c. No change85. The ideal aero plane must be one in which there is no\_\_\_\_(Ref-ACK 160)a. Aspect ratiob. Fineness ratio**c. Parasite drag**86. In the nature of a flying wing , we should than obtain a lift (Ref-ACK 160)a. 20 times greater than dragb. 30 times greater than drag**c. 40 times greater than drag**87. At high speed tight turn radius of turn will be(Ref-ACK 223)**a. small**b. Largec. Same89. The aircraft stopped rolling and provided it is still travelling straight ahead the aerodynamic force will be influenced by**a. Airstream passing over and below the aircraft**b. Airstream passing over the aircraftc. Airstream passing below the aircraft90. Aircraft take off angle of attack during climbinga. at 25 degree of AOAb. above the stalling angle**c. Below the stalling angle**91. Greater range if we fly a great deal faster than the(Ref-ACK 175)**a. Minimum drag speed**b. Maximum drag speedc. Maximum stalling speed92. The tangent of the gliding angle is directly dependent on the(Ref-ACK 181)**a. L/D ratio**b. Fineness ratioc. Aspect ratio93. The greater the value of L/D the gliding angle will be(Ref-ACK 181)**a. Flatter**

b. Steeper

c. No change94. When banking on a turn the lift on the wings must be(Ref-ACK 190)**a. greater than the weight** b. Lesser than the weightc. Same as the weight95. The altitude at which required power and available power curve are tangential to each other isa. Service ceiling

**b. Absolute ceiling**

c. Absolute power96. In aerobatics every part of an aero plane is given load factor which varies accordingly to conditions being usually(Ref-ACK 236)**a. Between 4 and 8**b. Between 2 and 4

c. Between 1 and 497. The angle of bank is quite independent of the\_\_\_\_\_\_(Ref-ACK 238)**a. Weight**b. Liftc. Drag98. As the angle of bank increases lift will(Ref-ACK 239)**a. Increase** b. Decreasec. Same99. The normal duties of the engine arte to propel the aero plane at(Ref-ACK 241)a. High speed at small angle of attackb. Low speed and large AOA**c. Both**100. A nose dive is really an exaggerated form of(Ref-ACK 251)**a. Gliding**

b. Climbing

c. Level flight101. In steep dive the weight is entirely balanced by(Ref-ACK 251)a. Lift

**b. Drag**

c. Thrust102. In gliding \_\_\_\_\_\_ is rarely performed in practice(Ref-ACK 251)a. Flatter glide**b. Steep dive**c. None103. The aileron act also as flap is known as(Ref-ACK 197)a. Ruddervatorb. Elevons**c. Flaperons**104. Differential movement of tail surface is known as (Ref-ACK 197)a. Flaperons

b. Elevons

**c. Tailerons**105. Low minimum speed and high maximum speed of aircraft will give(Ref-ACK 192)a. poor speed range **b. Good speed range** c. None106. When the flap is lowered and the chances are that center of pressure on top of the surface will move (Ref-ACK 213)**a. Forward**

b. Backward

c. Remains same107. Streamlining will give (Ref-ACK 208)**a. Flatter glide angle** b. Steeper glide anglec. Steep dive108. Estimating the power available from the engine and power required for level flight at various speed is given by (Ref-ACK 218)**a. Performance curve**b. Lift curvec. Drag curve109. The pilot can put the nose down slightly and maintain level flight at an (Ref-ACK 217)a. Increased speed & increased AOA**b. Increased speed & decreased AOA**c. Decreased speed & decreased AOA110. At any certain height the power available & power required curve to each other called**a. Absolute ceiling**b. Service ceiling c. Absolute power

111. Lowering flaps during the glide will generally\_\_\_\_\_\_\_\_ the glide(Ref-ACK 484)a. Flatten

**b. Steepen**

c. No Effect112. During climb an increase in weight will mean a reduction in (Ref-ACK 285)a. Range

b. Endurance

**c. Both**113. The instrument is used for measuring the flight Mach no of an aircraft\_\_\_\_\_\_\_\_\_\_\_\_(Ref-ACK 488)a. Speedometer

b. Ammeter

**c. Mach meter**

Flight Stability& Dynamics

1. In the half way the stability and instability is called (Ref-ACK 257)a. Perfect stability b. Out of trim stability **c. Neutral stability** 2. Directional control is provided by (Ref-ACK 273)**a. Rudder** b. Aileron c. Elevator 3. If the aircraft is sideslip which stability is affected (Ref-ACK 267)a. Longitudinal stability b. Dynamic stability**c. Directional stability** 4. The axis which passes from nose to tail is called a. Lateral axis **b. Longitudinal axis** c. Vertical axis 5. The normal axis which passes through **a. CG** b. CP c. Both 6. The position of cg which is too far back (Ref-ACK 259)**a. Longitudinal instability** b. Lateral instability c. Both 7. The longitudinal stability is depend upon (Ref-ACK 260)a. The position of C.G b. The tail planec. The tail plane its area and distance from C.G **d. All**8. In all airplane when flying at a small AOA there is a resistance to roll on the down going wing will increase (Ref-ACK 262)a. Liftb. AOA**c. Both**9. Airplane which have a hail tail plane on top of a high fin (Ref-ACK 267)a. Directional stability

**b. Lateral stability**c. Longitudinal stability10. When the controls are incorporated ------------ will be activated (Ref-ACK 285)**a. Stick shaker** b. Stick pusher c. Both 11. MTCS-about stability**a. Stability characteristics about all axis are different**b. Stability around lateral axis is different from stability around roll and yaw axisc. Stability around all axis are same12. Longitudinal stability is affected by (Ref-ACK 259)**a. Wing**b. Vertical stabilizerc. Rudder13. Longitudinal stability is highly affected due to (Ref-ACK 259)a. Movement of tail plane**b. Movement of center of gravity**c. Movement of center of pressure14. The control surfaces are placed as far as possible away the\_\_\_\_\_\_\_\_\_ So as to provide sufficient leverage to alter the position of the airplane. (Ref-ACK 274)a. Center of pressure

**b. Center of gravity**c. Aerodynamic center 15. Longitudinal stability is affected by**a. Hull**

b. Vertical stabilizer

c. Rudder16. If pitching moment about fuselage disturbed then which stability is affected (Ref-ACK 260)a. Lateral **b. Longitudinal**c. Directional17. If directional stability is too much and too little dihedral (Ref-ACK 272)a. Dutch roll

b. Yaw divergence

**c. Roll Divergence**18. Which of the following effects on stabilitya. Stick fixed

b. Stick free

**c. Both**19. More directional and less lateral stability (Ref-ACK 486)a. Dutch roll**b. Spiral divergence**c. Directional divergence20. Trim tab requires a. More stick force

b. Less stick force

**c. Zero stick force**21. During a common method used to eliminate Dutch roll is by**a. Yaw damping**b. Climbingc. Gliding22. Distribution of fuselage side surface more than ahead of CG than after will affect (Ref-ACK 268)**a. Directional stability**

b. Lateral stabilityc. Longitudinal stability23. The stability which is very rarely achieved in practice (Ref-ACK 258)a. Lateral stabilityb. Longitudinal stability**c. Dead-beat stability**24. Stick fixed condition (Ref-ACK 258)**a. The elevators are held in their neutral position relative to the tail plane**b. The pilot releases control column and allows the elevators to take up their own positions c. Both a and b

25. The longitudinal dihedral is made for a. High – speed aircraftb. Low – speed aircraft**c. Most aircraft**26. If the aircraft has sweepback wing and stall on tip the aircraft gives which movement**a. Pitching**

b. Yawing

c. Rolling27. Longitudinal stability is about which axis (Ref-ACK 259)**a. Lateral axis**b. Longitudinal axisc. Normal axis28. A small fin at the end of long fuselage may be just as effective in producing (Ref-ACK 268)a. Lateral stability

b. Longitudinal stability**c. Directional stability**29. Aircraft will have weaker positive directional opposed to positive lateral stability can result in aa. Spiral divergenceb. Directional divergence**c. Dutch roll**30. During equilibrium flight operation stability depends ona. Magnitude of force applied b. Length from the C.G**c. Both a and b**31. The most common method of obtaining lateral stability by use of **a. dihedral angle on main plane** b. Dihedral of tail planec. Both32. When an aircraft is in damping oscillation at a period of time **a. Dynamic stability**b. Static stabilityc. Static negative stability33. Longitudinal instability is due to the (Ref-ACK 260)**a. Pitching movement on main plane**b. Rolling movement on wings

c. Yawing movement on tail plane 34. Stick free condition (Ref-ACK 258)a. The elevators are held in their neutral position relative to the tail plane**b. The pilot releases control column and allows the elevators to take up their own positions**c. Both a and b35. Lateral stability about which axis (Ref-ACK 259)a. Lateral axis b. Directional axis **c. Longitudinal axis** 36. Lateral stability is maintained by (Ref-ACK 267)**a. sweep back angle**b. Angle of incidence c. Angle of attack

37. If the planes are inclined upward towards the wing tips the dihedral (Ref-ACK 262)**a. Positive**

b. Negative

c. Neutral38. Lateral stability can be reduced by (Ref-ACK 262)a. Swept back angle**b. Anhedral angle**c. Dihedral angle 39. Angle between main plane and tail plane is known as (Ref-ACK 260)**a. Longitudinal Dihedral angle** b. Angle of bank c. Angle of attack40. The stability of an aircraft considered during design of the aircraft (Ref-ACK 257)a. Lateral stability**b. Inherent stability**c. Dead-beat stability41. If rudder pedal is un-operative than which may be useda. Stick shaker

**b. Stick pusher**

c. Sensor42. The pendulum effect on high wing aircraft (Ref-ACK 274)**a. Increase lateral stability**b. Decrease lateral stabilityc. Has no effect on lateral stability43. Which tab requires more stick forcea. Balanced tab

**b. Anti-Balanced tab**

c. Spring tab44. Forces & moments on the body caused by a disturbance initially tends to return the body towards its equilibrium positiona. Dynamic Stabilityb. Equilibrium position**c. Static stability**45. Modification of servo tab is called (Ref-ACK 277)a. Balanced tab b. Trim tab **c. Spring tab**46. Differential aileronsa. Upward aileron movement is large**b. Downward aileron movement is large**c. Upward aileron movement is small47. In Slot-cum-aileron control if aileron is move down then the slat will (Ref-ACK 284)**a. Open**

b. Close

c. No change48. Adverse yaw will be counteracted by a. Wash outb. Slot-cum-aileron control**c. Both**49. The airflow crosses expansion wave its velocity will**a. Increase**b. Decreasec. Remains same50. Mass Balancing Will reduce (Ref-ACK 279)a. Speed

b. Drag

**c. Flutter**51. Degree of stability affected by (Ref-ACK 258)a. Stick fixed

b. Stick free

**c. Both**52. If CG is low in high wing aircraft (Ref-ACK 265)a. Longitudinal stability**b. Lateral stability**c. Pitching53. Mark the correct statement (Ref-ACK 260)a. If the plane does not have longitudinal dihedral it means its longitudinally unstable**b. Longitudinal dihedral means actual angle at which tail plane expose to airflow**c. Both a and b