

These are sample MCQs to indicate pattern, may or may not appear in examination

University of Mumbai Online Examination 2020

Program: BE Automobile Engineering

Curriculum Scheme: Revised 2016

Examination: Fourth Year Semester VII

Course Code: AEDLOC7033 and Course Name: Automotive Aerodynamics and Aesthetics

Time: 1-hour

Max. Marks: 50

Note to the students: - All the Questions are compulsory and carry equal marks.

Q1.	The density of any material is defined as
Option A:	Mass per unit area
Option B:	Thermal conductivity
Option C:	Mass per unit volume
Option D:	Area*Volume
Q2.	flow phenomenon related to vehicle?
Option A:	External flow
Option B:	Aerodynamic drag
Option C:	Rolling resistance
Option D:	potential
Q3.	What are the strategies of aerodynamics development?
Option A:	Detail optimization
Option B:	Aerodynamics drags
Option C:	low overall weight
Option D:	Acceleration
Q4.	Climbing resistance may be expressed by _____
Option A:	$W_c = \cos \phi G 9.81 \text{ N}$
Option B:	$W_c = \sin \phi G 9.81 \text{ N}$
Option C:	$W_c = \tan \phi G 9.81 \text{ N}$
Option D:	$W_c = \cot \phi G 9.81 \text{ N}$
Q5.	Expression for lift
Option A:	$L = (1/2)\rho v(D)pAv$
Option B:	$L = (1/2)C_L(\beta)\rho AV^2$
Option C:	$L = (1/4)C_L(\beta)\rho AV$
Option D:	$L = C_L(\beta)\rho AV$

Q6.	Mach number representing the ratio of speed of an object moving through a medium and the local speed related to
Option A:	Force
Option B:	Inertia
Option C:	Sound
Option D:	Torque
Q7.	Hypersonic wind tunnel tests are applicable for a range according to the fluid flow of speed
Option A:	($M < 0.8$),
Option B:	($0.8 < M < 1.2$)
Option C:	($1.2 < M < 5.0$)
Option D:	($M > 5.0$)
Q8.	In a wind tunnel, the section with minimum area is called as _____
Option A:	exit
Option B:	nozzle
Option C:	inlet
Option D:	throat
Q9.	Which value are considered of drag coefficient, while calculating the aerodynamic force for HALF-SPHERE shape of body?
Option A:	1.17
Option B:	0.47
Option C:	0.42
Option D:	0.5
Q10.	When the vehicle has constant velocity then forces are _____
Option A:	Balanced
Option B:	Unbalanced
Option C:	Less acting on it
Option D:	More acting on it
Q11.	Which software is used for vehicle dynamic simulation
Option A:	CAD
Option B:	CREO
Option C:	Python
Option D:	Quasi- static simulation software
Q12.	When the vehicle has stationary condition then forces are _____
Option A:	Balanced
Option B:	Unbalanced
Option C:	Less acting on it
Option D:	More acting on it

Q13.	When vehicle is accelerating then generates ____ and ____ forces
Option A:	Drag, Lift and driving force
Option B:	Drag and driving force
Option C:	Lift and driving force
Option D:	Drag and Lift
Q14.	Which is not a resistance force
Option A:	Acceleration
Option B:	Air resistance
Option C:	Rolling friction
Option D:	Road Friction
Q15.	Front spoiler increases the volumetric flow through the cooling air duct and _____
Option A:	reduces the lift at the front of the car
Option B:	reduces drag by increasing the profile area
Option C:	reduces pitching
Option D:	reduces nose decking
Q16.	Front end modifications are worked to improve
Option A:	the weight of vehicle
Option B:	the drag reduction
Option C:	the height of bonnet
Option D:	tyre size
Q17.	Boat tailing helps to _____ the drag.
Option A:	Increase
Option B:	Amplify
Option C:	decrease
Option D:	keep constant
Q18.	The accuracy of the calculated parameters (thickness of the layer, shear stress at the wall and the point of separation) decreases as the fineness of the body decreases, mainly because of uncertainty in
Option A:	the strength of wake region
Option B:	predicting the point of separation and pressure within the wake
Option C:	the magnitude of drag force vertices within the wake
Option D:	pressure within the wake
Q19.	The drag (cD) of a rectangular box with air flowing along its longitudinal axis is
Option A:	1.2
Option B:	0.05
Option C:	0.45
Option D:	0.9

Q20.	The drag of a rectangular box with air flowing along its longitudinal axis is almost entirely pressure drag
Option A:	frictional drag
Option B:	pressure drag
Option C:	interference drag
Option D:	induced drag
Q21.	For the simple case of the flat plate perpendicular to the oncoming flow the point of separation is determined by the sharp edges but the pressure drag cannot be calculated for the _____
Option A:	turbulent eddies
Option B:	laminar wake
Option C:	turbulent wake
Option D:	boundary layer region within wake
Q22.	In aerodynamics the friction free flow is also called _____
Option A:	non-viscous flow
Option B:	viscous flow
Option C:	laminar flow
Option D:	turbulent flow
Q23.	The following is the preliminary stage of Production planning
Option A:	Capacity planning
Option B:	Material requirements planning
Option C:	Scheduling
Option D:	Product development and design
Q24.	Based on their field of application, manufactured goods can be classified as
Option A:	Primary, Secondary and Tertiary
Option B:	Consumer, Capital and Defense
Option C:	Essential, Market and Standard
Option D:	Primary, Luxury and Consumer
Q25.	The following aspect of product is concerned with the ease and efficiency of the product performance
Option A:	Functional aspect
Option B:	Operational aspect
Option C:	Durability aspect
Option D:	Aesthetic aspect