

# Latest Delphi TVS Technical Questions

**Q1. Bronze is used in journal bearings essential to**

- a) reduce friction
- b) reduce heat
- c) eliminate oxidization
- d) eliminate seizing

**Q2. Temperature rise in fluid flow causes**

- a) reduction in viscosity
- b) increase in viscosity
- c) no effect

**Q3. Corioles component is associated with**

- a) Displacement
- b) acceleration
- c) velocity
- d) none

**Q4. Hardness in steel is a result of**

- a) martensitic structure
- b) pearlitic structure
- c) leduburetic structure
- d) austenitic structure

**Q5. A 523 kg experimental rocked sted can be accelerated from rest to 1602 km/h in 1.82s. What net force is required?**

- a)  $4.6 \times 10^6 \text{N}$
- b)  $4.6 \times 10^5 \text{N}$
- c)  $1.6 \times 10^6 \text{N}$
- d)  $1.3 \times 10^5 \text{N}$

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**Q6. How many atoms are present in a mole of  $\text{CH}_4$ ?  
(Avogadro's number =  $6.023 \times 10^{23}$  /mole)**

- a)  $1.2 \times 10^{24}$
- b)  $3.01 \times 10^{24}$
- c)  $1.2 \times 10^{23}$
- d)  $6.023 \times 10^{23}$

**Q7. A 16 ohm resistor and 8 ohm resistor are connected in series across a 12V battery. What is the voltage across each resistor respectively?**

- a) 8V, 4V
- b) 4V, 8V
- c) 12V, 12V
- d) 6V, 6V

**Q8. Machine tool drives are generally given in:**

- a) arithmetic progression
- b) geometric progression
- c) harmonic progression
- d) none of the above

**Q9. Coolant is generally not used while machining**

- a) low carbon steel
- b) high carbon steel
- c) cast iron
- d) alloy steel

**Q10. How many of the following statements regarding light are true?**

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1. Light travels in a straight line even when it crosses between two media of different refractive index
2. Infrared light has longer wavelength than ultra-violet light
3. Light can behave both like a ray and like a particle
4. It is possible to get a real image with a concave lens

- a) Only one
- b) Only two
- c) Only three
- d) All four

**Q11. Finite element analysis is used in**

- a) accurate measurement
- b) stress analysis
- c) metallurgy
- d) none of the above

**Q12. How many of the following statements regarding sound are true?**

1. Intensity depends on the square root of the amplitude
2. Loudness only depends on the intensity of a sound
3. The pitch of a sound depends on the frequency
4. Sound is reflected whenever a change in acoustic impedance is encountered.

- a) Only one
- b) Only two
- c) Only three
- d) All four

**Q13. A power station generates 500MW of power and exhausts 800MW as waste heat into the environment. What is the efficiency of the power station?**

- a) 61.5%
- b) 38.5%
- c) 62.5%

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d) 23%

**Q14. Machinability of steel is improved by the presence of**

- a) nickel
- b) tungsten
- c) sulphur
- d) chromium

**Q15. How long does it take a 350 W coffee pot to boil of 0.7 L of water initially at 1000 c? The latent heat of vapourisation of water =  $2.1 \times 10^6$  J/kg.**

- a) 6.1 min.
- b) 7.0 min
- c) 3.9 min.
- d) 3.1 min.

**Q16. Negative rake angle**

- a) increases cutting force
- b) decreases cutting force
- c) no effect on cutting force
- d) none of the above

**Q17. The hardest tool material used is**

- a) coated carbide
- b) high speed steel
- c) boron nitride
- d) diamond

**Q18. Stick slip phenomenon is associated with**

- a) spindle rotation

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- b) belt drives
- c) slide movement
- d) none of the above

**Q19. Gear hobbing is**

- a) shaping process
- b) generating process
- c) forming process

**Q20. Cutting speed of H.S.S tools while cutting low carbon steel**

- a) 40m/min
- b) 250m/min
- c) 500m/min
- d) none

**Q21. Cutting speed of carbide tools while cutting low carbon steel**

- a) 40m/min
- b) 250m/min
- c) 500m/min
- d) 80m/min

**Q22. Straightness that can be achieved over a length of 300mm by grinding**

- a) .005 -.01mm
- b) 0.1-0.2mm
- c) 0.05-0.1mm
- d) 0.5-0.8mm

**Q23. The circularity that can be achieved by finish turning on a standard centre lathe is**

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- a) 0.005-0.008mm
- b) 0.0-0.08mm
- c) 0.1-0.2mm
- d) 0.2-0.3mm

**Q24. Honing can correct**

- a) ovality
- b) taper
- c) straightness of bore
- d) axial curvature

**Q25. Machine tool sliding surfaces are finish matched by**

- a) surface grinding
- b) fine milling
- c) slide way grinding
- d) scraping

**Q26. Close sliding fit is given by**

- a) H7/g6
- b) H7/h6
- c) H9/p6
- d) H7/k6

**Q27. 60H6 can be achieved by**

- a) turning
- b) boring
- c) drilling
- d) internal grinding

**Q28. The displacement accuracy which can be achieved on a jig boring machine**

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- a)  $5/\mu\text{m}$
- b)  $50/\mu\text{m}$
- c)  $100/\mu\text{m}$

**Q29. Hardness value in cast iron can be measured in**

- a) shore
- b) BHN
- c) Rockwell
- d) none

**Q30. Auto collimator is used to measure**

- a) diameter upto 0.001mm
- b) lengths
- c) straightness
- d) Involute error

**Q31. Surface finish is measured by**

- a) comparator
- b) planograph
- c) spirit level
- d) none

**Q32. The outside diameter of a 20 teeth 3 module gear is**

- a) 54
- b) 60
- c) 63
- d) 70

**Q33. Herring bone gear is used for**

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- a) High speed transmission
- b) noise free transmission
- c) Better load transmission
- d) none

**Q34. In a right angle transmission by helical gears, the hand of the helix of the gears are**

- a) same
- b) opposite
- c) Immaterial
- d) none

**Q35. Worm drive is always self-locking**

- a) True
- b) false

**Q36. Most hydrostatic bearings normally work under**

- a) constant flow system
- b) constant pressure system
- c) constant temperature system
- d) constant volume system

**Q37. Ball bearings are not generally used in crank shafts of automobiles because**

- a) of high cost
- b) of high speed
- c) cannot be assembled
- d) none

**Q38. The spindle of high precision cylindrical grinder is mounted on**



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- a) Ball bearing
- b) Taper roller bearing
- c) Hydrostatic bronze bearing
- d) needle bearing

**Q39. To accelerate the flow of gases**

- a) nozzle is used
- b) diffuser is used
- c) dia of pipe to increased
- d) none of these will help

**Q40. Hydraulic accumulator**

- a) acts as an accumulator
- b) acts as a storage for hydraulic energy
- c) acts as a pressure relief
- d) none

**Q41. When ice which is floating in water, melts, does the level to water**

- a) go up
- b) go down
- c) remain the same.

**Q42. Hammer blow in pipe happens due to**

- a) friction in pipes
- b) change in temperature
- c) stoppage of flow
- d) none

**Q43. Ratio between velocity of sound and velocity of any object is**

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- a) prandtl number
- b) Reynolds number
- c) avagadros number
- d) mach number

**Q44. Cavitation effect in flow occurs due to**

- a) excess pressure
- b) excess temperature
- c) excess flow
- d) none

**Q45. In electrical locomotives ultimate transmission is by**

- a) AC Motor
- b) DC Shunt Motor
- c) DC Series Motor
- d) Synchronous motor

**Q46. Four beams of identical sections and lengths are made of cast iron, aluminium, steel and hardened steel. The beams are fixed at both ends; for a uniformly distributed load which will deflect least**

- a) cast iron
- b) aluminium
- c) steel
- d) hardened steel

**Q47. Geneva mechanism is used for obtaining**

- a) Intermittent motion
- b) accelerating motion
- c) continuous motion
- d) none

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**Q48. Effect of increase of outside diameter of a helical compression spring on its rigidity is**

- a) increased rigidity
- b) decreased rigidity
- c) no effect
- d) dry friction

**Q49. Jominey curve is related to the study of**

- a) hydraulics
- b) thermodynamics
- c) electrical
- d) none

**Q50. TTT diagram is used in**

- a) surface finish
- b) heat treatment
- c) stress analysis
- d) thermodynamics

**Q51. Mehanite is the name given to a type of**

- a) alloy steel
- b) granite
- c) nodular cast iron
- d) cast iron

**Q52. Unwanted impurity in molten aluminium is**

- a) oxygen
- b) carbon dioxide

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- c) nitrogen
- d) hydrogen

**Q53. A force that averages 984 N is applied to a 0.42 kg steel ball moving at 13.8 m/s by a collision that lasts 0.027 s. If the force is in a direction opposite to the initial velocity of the ball, what is the final speed of the ball?**

**Q54. A stone initially at rest is dropped over the edge of a very tall building. Taking  $g$  as  $10\text{m/s}^2$ , what was the change in the speed of the stone building during the 4th second?**

- a)  $10\text{m/s}$
- b)  $30\text{m/s}$
- c)  $15\text{m/s}$
- d)  $40\text{m/s}$

**Q55. How long will it take a 2000w motor to lift a 320kg container vertically upwards for 26m? ( $g = 9.8\text{m/s}^2$ )**

**Q56. A collision between two isolated items will in generally conserve**

- a) the total kinetic energy and the total momentum of the system
- b) the total kinetic energy but not the total momentum of the system
- c) the total momentum but not the total kinetic energy of the system
- d) the momentum of each object

**Q57. How many of the following statements are true:**

- a) the buoyant force on a body depends on the shape of the body
- b) the buoyant force on a body always acts in the same direction
- c) the buoyant force on a body depends on the mass of the body
- d) the buoyant force on a body depends on the density of the fluid surrounding the body

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**Q58. A body partially floats with  $\frac{2}{3}$  of its volume under the surface of a fluid. If the density of the fluid is  $X \text{ kg/m}^3$ , what is the density of the body?**

- a)  $\frac{3}{2} X \text{ kg/m}^3$
- b)  $\frac{2}{3} X \text{ kg/m}^3$
- c)  $14.7 X \text{ kg/m}^3$
- d)  $0.15 X \text{ kg/m}^3$

**Q59. A 6kg ball is suspended from two wires of equal length. The angle between the wires is 90 degrees. What is the tension in each wire?**

**Q60. Piston of an IC engine is made out of**

- a) cast iron
- b) steel casting
- c) beryllium alloy
- d) aluminium alloy

**Q61. The crank shaft of a 300 HP IC engine is**

- a) hot forged
- b) shell moulded
- c) cold forged
- d) obtained through investment casting

**Q62. What is the force exerted on a submarine window of  $2\text{m}^2$  area, if the submarine is at a depth of 2 km below the surface? (the density of sea water is  $1.03 \times 10^3 \text{ kg/m}^3$ ).**