

PROVISIONAL ANSWER KEY

Inspector of Motor Vehicles, Class II, Advt No. 102/2016-17(ATX-AUTO)

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Note: Candidate must ensure the compliance to send all suggestion in the given format with reference to this paper with provisional answer key only.

001. A ball and socket joint forms kinematic pair
 (A) Turning pair (B) Screw pair
 (C) Spherical pair (D) Sliding pair
002. The motion of a circular shaft with collars at each end rotating in a round hole constitutes between the elements of kinematic pair
 (A) Successfully constrained motion
 (B) Completely constrained motion
 (C) Incompletely constrained motion
 (D) None of the options
003. If N kinematic links are connected at a same pin joint in a kinematic chain, the joint is equivalent of
 (A) $(N-1)$ binary joints (B) $(N-2)$ binary joints
 (C) $(2N-3)$ binary joints (D) $(2N-1)$ binary joints
004. Unconstrained rigid link in plane has
 (A) One degree of freedom (B) Zero degree of freedom
 (C) Three degree of freedom (D) Two degree of freedom
005. One of the links of constrained kinematic chain is fixed, the result is
 (A) Structure (B) Frame
 (C) Mechanism (D) None of the options
006. The smallest circle drawn to the cam profile from the centre of rotation of a radial cam is called
 (A) Base circle (B) Prime circle
 (C) Pitch Circle (D) None of the options
007. The size of cam depends upon
 (A) Prime circle (B) Base circle
 (C) Pitch Circle (D) None of the options

008. The angle between the direction of follower motion and normal to the pitch curve is called
(A) Pitch angle (B) Prime angle
(C) Pressure angle (D) None of the options
009. For dynamic balance of a shaft,
(A) The net dynamic force acting on the shaft is equal to zero
(B) The net couple due to dynamic forces acting on the shaft is equal to zero
(C) Both (A) and (B)
(D) None of the options
010. The engine of the aeroplane rotates in clockwise direction when seen from the tail end and the aeroplane takes a turn to the left. The effect of gyroscopic couple on the aeroplane will be?
(A) To raise the nose and dip the tail
(B) To dip the nose and raise the tail
(C) To raise the nose and tail
(D) To dip the nose and tail
011. Due to slip of the belt, the velocity ratio of the belt drive
(A) Remains same (B) Decreases
(C) Increases (D) None of the options
012. The velocity ratio of two pulleys connected by an open belt or crossed belt is
(A) Directly proportional to their diameters
(B) Inversely proportional to their diameters
(C) Directly proportional to the square of their diameters
(D) Inversely proportional to the square of their diameters
013. When no external force acts on the body, after giving it an initial displacement, then the body is said to be under
(A) Free vibrations (B) Forced vibrations
(C) Random vibrations (D) None of the options

014. The speed, at which the shaft runs so that the additional deflection of the shaft from the axis of rotation becomes infinite, is known as
(A) Normal speed (B) Under speed
(C) Critical speed (D) None of the options
015. In under damped vibrating system, if x_1 and x_2 are the successive values of the amplitude on the same side of the mean position, then the logarithmic decrement is equal to
(A) $\log, (x_1 x_2)$
(B) $\log, \left(\frac{x_1}{x_2}\right)$
(C) $\log, (x_1 + x_2)$
(D) None of the options
016. Two dimensional metal cutting in which the cutting edge is normal to the work piece is called
(A) Orthogonal cutting (B) Oblique cutting
(C) Forming (D) None of the options
017. Angle between the face of the tool and a line parallel with base of the tool measured in a perpendicular plane through the side cutting edge is called
(A) Side rake angle (B) End relief angle
(C) Side relief angle (D) Back rake angle
018. Which of the following accessory is employed on metal cutting lathe for holding jobs, which cannot be conveniently held between centers or by chucks
(A) Chuck (B) Mandrel
(C) Face plate (D) None of the options
019. On metal cutting lathe the distance that a tool advances into the work during one revolution of the headstock spindle is called
(A) Cutting speed (B) Feed
(C) Depth of cut (D) None of the options

020. In shaper machine the time taken during the idle stroke is less as compared to forward cutting stroke and this is obtained by mechanism.
- (A) Clapper box (B) Back gear
(C) Quick return (D) None of the options
021. On planer machine
- (A) Work piece is held stationary and the cutting tool on the ram is moves back and forth across the work
(B) The tool is stationary and the work piece travels back and forth under the tool
(C) Both work piece and tool travel back and forth
(D) None of the options
022. The cylindrical portion of the land of the twist drill bit which is not cut away to provide clearance is called
- (A) Neck (B) Helix
(C) Point (D) Margin
023. When viewed from the cutting point the anticlockwise rotation of a drill in order to cut is called
- (A) Left hand cut drill bit (B) Right hand cut drill bit
(C) Rasp cut drill bit (D) Core drill bit
024. The process by which grinding wheel restores the original shape is known as
- (A) Truing (B) Dressing
(C) Marking (D) None of these options
025. The flattened end of a taper shank drill bit, intended to fit into a driving slot in a socket is known as
- (A) Web (B) Flute
(C) Land (D) Tang

026. When the hole in the sheet metal is to be accurate then
(A) Die is made to the size of the hole
(B) Punch size is obtained by subtracting clearance
(C) Punch is made to the size of the hole
(D) All of the options
027. Which of the following sheet metal operation is not performed on press machine
(A) Blanking
(B) Metal spinning
(C) Drawing
(D) Punching
028. The spacing of abrasive particles with respect to one another in grinding wheel is called
(A) Structure of the wheel
(B) Grain size
(C) Grade
(D) Grit
029. In oxy-acetylene gas welding three types of flames can be adjusted. Which order is correct for descending temperature?
(A) Neutral, Oxidizing, Carburizing
(B) Oxidizing, Neutral, Carburizing
(C) Oxidizing, Carburizing, Neutral
(D) Carburizing, Oxidizing, Neutral
030. Which of the following metals are used in solder alloys?
(A) Aluminum
(B) Gold
(C) Tin
(D) Iron
031. The purpose of adding wood flour or saw dust to foundry sand is to improve
(A) Mouldability
(B) Collapsibility
(C) Dry strength
(D) Hot strength
032. Investment casting uses pattern made of
(A) Wax
(B) Clay
(C) Metal
(D) Wood

033. Casting defect development due to inadequate venting is
(A) Inclusions (B) Cold Shuts
(C) Blow holes (D) None of the options
034. The operation of making a cone shaped enlargement or recess at the end of a hole is called
(A) Spot facing (B) Tapping
(C) Boring (D) Countersinking
035. Precision is
(A) Performance of the product
(B) Reproducibility of the process
(C) Degree of conformity with a standard
(D) None of the options
036. A cylindrical specimen of steel having original diameter of 10 mm is tensile tested to fracture. If its cross section diameter at fracture is 8 mm then the ductility in terms of percent reduction in area will be
(A) 36 % (B) 70 %
(C) 20 % (D) 46 %
037. When a metal part is subjected to a high constant stress at high temperature for a longer period of time, it will undergo a slow and permanent deformation, called as
(A) formability (B) Slip
(C) Creep (D) None of the options
038. If strain measurements were made during a tensile test, which of the following would have the higher value
(A) Engineering strain
(B) True strain
(C) Both engineering and true strain will be same
(D) None of the options

039. A tensile test uses a test specimen that has a gage length of 50 mm and cross section area is 200 mm^2 . During the test the specimen yields under a load of 98,000 N. Determine yield strength.
- (A) 1960 MPa (B) 300 MPa
(C) 490 MPa (D) None of the options
040. Snap gauge is used to quickly measure/verify
- (A) Outside dimensions of the part
(B) Inside dimensions of the part
(C) Both (A) and (B)
(D) None of the options
041. A tolerance is, which one of the following
- (A) Clearance between a shaft and a mating hole
(B) Measurement error
(C) Total permissible variation from a specified dimension
(D) Variation in manufacturing
042. Errors which are regularly repetitive in nature are
- (A) Systematic errors (B) Avoidable errors
(C) Random errors (D) Loading errors
043. The value of pressure above the reference value of atmospheric pressure is
- (A) Absolute pressure (B) Gauge pressure
(C) Vacuum pressure (D) Loading errors
044. The desirable characteristics of the manometer fluid used to measure pressure are
- (A) High viscosity and high surface tension
(B) Low viscosity and high surface tension
(C) Low viscosity and low surface tension
(D) None of the options

045. The gear tooth venire is used to measure
(A) Gear tooth profile
(B) Pitch line thickness of the gear tooth
(C) Module of the gear
(D) None of the options
046. Which of the following thermodynamic law provides the basis for measurements of thermodynamic property, temperature
(A) Zeroth law of thermodynamic
(B) First law of thermodynamic
(C) Second law of thermodynamic
(D) None of the options
047. Hot wire anemometer is a device used to measure
(A) Pressure in gases (B) Liquid discharge
(C) Gas velocities (D) Temperature
048. Zero decibel (dB) sound pressure level (SPL) represents
(A) Zero acoustic pressure
(B) Quietest sound audible to a healthy human ear
(C) No sound
(D) None of the options
049. The instrument which measures the temperature of the source without direct contact is
(A) Liquid in glass thermometer (B) Vapour pressure thermometer
(C) Pyrometer (D) Thermocouple
050. Orsat apparatus is used for
(A) Gravimetric analysis of flue gas
(B) Volumetric analysis of flue gas
(C) Mass flow of flue gas
(D) None of the options

- 051.** Rotameter is a
(A) Variable head flow meter
(B) Variable area flow meter
(C) Rotating propeller type flow meter
(D) None of the options
- 052.** A cycle consisting of one constant pressure, one constant volume and two isentropic processes is known as
(A) Stirling cycle (B) Carnot cycle
(C) Otto cycle (D) Diesel cycle
- 053.** The amount of heat required to raise the temperature of the unit mass of gas through one degree at constant volume, is called
(A) Specific heat at constant volume
(B) Specific heat at constant pressure
(C) Kilo Joule
(D) None of the options
- 054.** The processes occurring in open system which permit the transfer of mass to and from the system, are known as
(A) Flow processes (B) Non-flow processes
(C) Adiabatic processes (D) None of the options
- 055.** Otto cycle is also known as
(A) Constant pressure cycle
(B) Constant volume cycle
(C) Constant temperature cycle
(D) Constant temperature and pressure cycle

056. Which of the following is the correct statement of the second law of thermodynamics
- (A) It is impossible to construct an engine working on a cyclic process, whose sole purpose is to convert heat energy into work.
 - (B) It is impossible to transfer heat from a body at a lower temperature to a higher temperature, without the aid of an external source
 - (C) There is a definite amount of mechanical energy, which can be obtained from a given quantity of heat energy
 - (D)** All of the options
057. In an isothermal process
- (A) There is no change in temperature
 - (B) There is no change in internal energy
 - (C)** Both A and B
 - (D) None of the options
058. The ratio of specific heat at constant pressure (c_p) and specific heat at constant volume (c_v) is
- (A) Equal to one
 - (B) Less than one
 - (C)** Greater than one
 - (D) None of the options
059. During which of the following process does heat rejection takes place in Carnot cycle?
- (A) Isothermal expansion
 - (B) Isentropic expansion
 - (C)** Isothermal compression
 - (D) None of the options
060. A closed cycle gas turbine works on?
- (A) Carnot cycle
 - (B)** Brayton cycle
 - (C) Otto cycle
 - (D) None of the options
061. When the gas is cooled at constant pressure?
- (A) Its temperature increases but volume decreases
 - (B) Its volume increases but temperature decreases
 - (C) Both temperature and volume increases
 - (D)** Both temperature and volume decreases

- 062.** In I.C. Engines power developed inside the cylinder is called
(A) Brake horse power (B) Pumping power
(C) Indicated horse power (D) None of the options
- 063.** Carnot cycle has maximum efficiency for
(A) Diesel engine (B) Petrol engine
(C) Irreversible engine (D) Reversible engine
- 064.** A thermodynamic system consisting of more than one phase is known as
(A) Isolated system (B) Open system
(C) Non-uniform system (D) Heterogeneous system
- 065.** Which processes do occur in the Brayton cycle
(A) Two reversible adiabatic processes and two reversible isochoric processes
(B) Two reversible adiabatic processes and two reversible isobaric processes
(C) Two reversible adiabatic processes and two reversible isothermal processes
(D) Two reversible adiabatic processes and two reversible isentropic processes
- 066.** The relative coefficient of performance (COP) is ratio between
(A) Actual COP and theoretical COP
(B) Theoretical COP and actual COP
(C) Relative COP cannot be calculated
(D) None of the options
- 067.** In free vibrations viscous damping force is proportional to the
(A) Velocity of the mass (B) Displacement of the mass
(C) Acceleration of the mass (D) None of these
- 068.** Air conditioning means
(A) Cooling (B) Heating
(C) Dehumidifying (D) All of the options

069. During humidification process, dry bulb temperature
(A) Remains constant (B) Increases
(C) Decreases (D) None of the options
070. Which of the following is not positive displacement type compressor?
(A) Rotary vane compressor (B) Rotary screw type compressor
(C) Centrifugal compressor (D) None of the options
071. Pick up the wrong statement. Refrigerant should have
(A) Low specific heat of liquid
(B) High boiling point
(C) High latent heat of vaporization
(D) None of the options
072. As warm air cools it's relative humidity
(A) Decreases (B) Increases
(C) Remains same (D) None of the options
073. Which part of the vapour compression refrigeration cycle, produces the refrigeration effect?
(A) Compressor (B) Condenser
(C) Evaporator (D) None of the options
074. For winter air-conditioning relative humidity should not be less than?
(A) 40 % (B) 20%
(C) 70 % (D) 95 %
075. The Bell-coleman refrigeration cycle uses as working fluid
(A) H₂ (B) Air
(C) CO₂ (D) None of the options
076. In vapour compression system condition of the refrigerant before entering the compressor is
(A) Wet vapour (B) Saturated liquid
(C) Superheated vapour (D) None of the options

077. The process, generally used in summer air conditioning to cool and dehumidify the air, is called
- (A) Humidification
 - (B) Dehumidification
 - (C) Heating and humidification
 - (D) Cooling and dehumidification**
078. In a psychrometric chart, relative humidity lines are
- (A) Vertical and uniformly spaced
 - (B) Horizontal and uniformly spaced
 - (C) Curved lines**
 - (D) None of the options
079. One of the difference between the vapor compression and vapor absorption cycle is, in vapour absorption refrigeration cycle role of compressor is performed by
- (A) Pump
 - (B) Small tubes
 - (C) Absorber and generator**
 - (D) Aqua-ammonia
080. In a saturated air-water vapour mixture (relative humidity of 100%), the
- (A) Dry bulb temperature is higher than wet bulb temperature
 - (B) Dew point temperature is lower than wet bulb temperature
 - (C) Dry bulb, wet bulb and dew point temperature are same**
 - (D) Dry bulb temperature is higher than dew point temperature
081. According to Stefan-Boltzmann law, the amount of radiant energy per unit area is proportional to
- (A) Absolute temperature
 - (B) Square of absolute temperature
 - (C) Fourth power of absolute temperature**
 - (D) Cube of absolute temperature

082. The Grashof number in natural convection plays same role as
(A) Prandtl number (Pr) in forced convection
(B) Reynolds number (Re) in forced convection
(C) Nusselt number (Nu) in forced convection
(D) None of the options
083. In which mode, does the heat energy transfer between two bodies when they are separated by some distance and there is no any medium between them?
(A) Conduction mode of heat transfer
(B) Convection mode of heat transfer
(C) Radiation mode of heat transfer
(D) Heat transfer cannot take place with above condition
084. Thermal conductivity of pure metals with rise in temperature normally
(A) Increases
(B) Decreases
(C) Remains same
(D) may increase or decrease depending on temperature
085. Heat transfer takes place as per
(A) Zeroth law of thermodynamics
(B) first law of thermodynamic
(C) Second law of the thermodynamics
(D) Kirchoff's law
086. According to the Fourier's law of heat conduction, the rate of heat transfer by conduction depends upon
(A) Area of cross section normal to the heat flow
(B) Temperature gradient
(C) Both A and B
(D) None of the options
087. The Stefan-Boltzmann law is applicable for heat transfer by
(A) Conduction and radiation combined
(B) Convection and radiation combined
(C) Conduction, convection and radiation combined
(D) Radiation alone

088. The reflectance of a black body is
(A) Zero (B) Infinity
(C) Greater than one (D) One
089. Radiation shield should have
(A) Low reflectivity (B) High reflectivity
(C) High emissivity (D) None of the options
090. The critical radius is the insulation radius at which the resistance to heat flow is
(A) Maximum (B) Minimum
(C) Zero (D) None of the options
091. The thermal diffusivity for gases is generally those for liquids.
(A) Equal to (B) Less than
(C) Greater than (D) None of the options
092. Reynolds number is the ratio of
(A) Energy transferred by convection to that by conduction
(B) Kinematic viscosity to thermal diffusivity
(C) Inertia force to viscous force
(D) None of the options
093. The ratio of energy transferred by convection to that by conduction is called
(A) Stanton number (B) Nusselt number
(C) Biot number (D) None of the options
094. The process of heat transfer from one particle of the fluid to another by the actual movement of the fluid particles caused by some mechanical means, is known as
(A) Conduction (B) Free convection
(C) Forced convection (D) Radiation

095. heat exchanger system can maintain a nearly constant gradient between the two flows over their entire length of contact.
(A) Countercurrent (B) Cocurrent
(C) Both A and B (D) None of the options
096. In a centrifugal clutch, the force with which the shoe presses against the driven member is theof the centrifugal force and the spring force.
(A) Difference (B) Sum
(C) Multiplication (D) None of the options
097. Brake fade is
(A) Loss of pedal (B) Loss of hydraulic fluid
(C) Loss of coefficient of friction (D) None of the options
098. The material used for lining of friction surfaces of a clutch should have coefficient of friction.
(A) Low (B) High
(C) Zero (D) None of the options
099. The inertia of the rotating parts of the clutch should be
(A) Minimum (B) Maximum
(C) Zero (D) None of the options
100. The cushioning springs in clutch plate are meant to reduce
(A) Vehicle speed (B) Jerky starts
(C) Torsional vibrations (D) None of the options
101. A brake commonly used in motor cars is
(A) Band and block brake (B) Internal expanding brake
(C) Band brake (D) None of the options
102. The brake bleeding process removes from system
(A) Air (B) Vacuum
(C) Excess fluid (D) Excess pressure

103. Hand brake usually operates on
(A) Rear wheels (B) Front wheels
(C) Right wheels only (D) Left wheels only
104. Critical whirling speed of the propeller shaft is increased by
(A) Decreasing its diameter (B) Increasing its length
(C) Decreasing its length (D) None of the options
105. The function of a universal joint is to allow the propeller shaft to
(A) Transfer torque at an angle (B) Bend side ways
(C) Change its length (D) None of the options
106. When the motion is repeated in equal intervals of time, it is known as
(A) Static motion (B) Periodic motion
(C) Non periodic motion (D) None of these
107. When car is taking a turn, the outer wheels will have to travel distance as compared to the inner wheels in the same time
(A) Smaller (B) Same
(C) Greater (D) None of the options
108. In forced vibration the ratio of the steady-state vibration amplitude to the static amplitude of motion is called the?
(A) Magnification factor (B) Resonance
(C) Static deflection ratio (D) None of the options
109. The shear strength of a metal is usually
(A) Greater than its tensile strength
(B) Less than its tensile strength
(C) Equal to its tensile strength
(D) None of these
110. The bevel gears arrangement in which the pinion gear axis is offset to the centre line of the crown wheel is called
(A) Straight bevel gears (B) Spiral bevel gears
(C) Hypoid gears (D) None of the options

111. The vehicle ride will be comfortable if
(A) Unsprung weight is kept minimum
(B) Sprung weight is kept minimum
(C) Vehicle weight is kept minimum
(D) None of the options
112. The function of a shackle with leaf spring is to
(A) Fix permanently spring end so length does not change
(B) Allow spring length to change
(C) To take partial load normal load directly
(D) None of the options
113. The coil spring in wishbone suspension is placed between the
(A) Two wishbones
(B) Upper wishbone and the cross member
(C) Lower wishbone and the cross member
(D) None of the options
114. The maximum room in the engine compartment is provided with
(A) Wishbone type suspension (B) Mc Pherson strut suspension
(C) Rigid axle suspension (D) Vertical guide suspension
115. In case of suspension leaf spring, zinc liners are used between the leaves to mainly
(A) Improve fatigue life (B) Provide damping
(C) Decrease vibrations (D) Prevent squeaking
116. In case of rigid front axle main axle beam is connected to the stub axle by means of
(A) Tie rod (B) King pin
(C) Pitman (D) None of the options
117. The angle formed by the wheel with the vertical when the top of the wheel slants outwards is called
(A) Positive camber (B) Negative camber
(C) Positive caster (D) Negative caster

118. The main purpose of recirculation ball type steering gear is to reduce
(A) Number of parts (B) Toe out during turns
(C) Operating friction (D) None of the options
119. On the cars having rack and pinion steering gear mechanism, the rack is attached to which following part through ball joint
(A) Relay rod (B) Tie rod
(C) Cross shaft (D) None of the options
120. Larger the steering angle, the ----- is the turning circle
(A) Smaller (B) Larger
(C) Correct (D) None of the options
121. The following type of lubrication system is used in two stroke engines
(A) Petroil (mist) system (B) Wet sump system
(C) Dry sump system (D) None of the options
122. In which of the following system, lubricating oil is carried in separate tanks from where it is fed to the engine
(A) Mist lubrication system (B) Wet sump system
(C) Dry sump system (D) None of the options
123. In thermosyphon engine cooling system there is/are
(A) No pump (B) Two pumps
(C) Only one pump (D) None of the options
124. In engine cooling system with water as a coolant and pump circulation which of the following pump is used
(A) Centrifugal pump (B) Reciprocating type
(C) Rotary vane pump (D) None of the options
125. As the temperature is increased, the viscosity of lubricating oil
(A) Decreases (B) Increases
(C) Remains same (D) None of the options

126. The most important characteristics of a lubricating oil is
(A) Viscosity (B) Physical stability
(C) Resistance to corrosion (D) None of the options
127. The maximum lubricating oil pressure in lubrication system is controlled by
(A) Oil filter (B) Pump rotor
(C) Pressure relief valve (D) None of the options
128. The minimum temperature at which lubricating oil gives off sufficient vapour so as to form an explosive mixture with air is called
(A) Pour point (B) Evaporation loss
(C) Flash point (D) None of the options
129. Which one of the following lubricant is suitable as solid lubricant
(A) Graphite (B) Derived from petroleum
(C) Obtained from Animal fat (D) None of the options
130. Which one of the following material is suitable for automotive radiator core
(A) Plastic (B) Cast iron
(C) Steel (D) Copper
131. Longitudinal distance between the centers of front and rear axles is called as
(A) Wheel track (B) Wheel Base
(C) Wheel over hang (D) All of these
132. Crumple zones of the automobile body of a collision so that the rate of deceleration experienced by the occupants is reduced
(A) Absorb the shock (B) Avoid the chances
(C) Reduce drag forces (D) None of the options
133. Chassis Frame tapers from rear to front to permit
(A) Reduction of drag due to friction forces of air
(B) Vertical movement of the wheels
(C) Adequate movement of the steering wheel and linkages
(D) None of the options

134. The part of the piston below the rings is called
- (A) Lower crown (B) Web
(C) Skirt (D) All of the options
135. Maximum percentage of anti-freeze(ethylene glycol) preferred with water in cooling systems is --
- (A) 30% (B) 70 %
(C) 50% (D) None of the options
136. Brake fluid used in hydraulic braking system should have
- (A) High viscosity (B) Low boiling point
(C) Should have less stability (D) High boiling point
137. Total retarding force produced at the wheels is equal to the vehicle weight itself, if coefficient of friction between tire and road is
- (A) One (B) Less than one
(C) Greater than one (D) None of the options
138. If n = total number of plates on driving and driven shaft in the multi plate clutch, then number of pairs of contact surfaces will be
- (A) $n + 1$ (B) $n + 2$
(C) $n - 1$ (D) $n - 2$
139. In a clutch with coil springs, the wear of the clutch facing will cause the clamping load to --
- (A) Increase (B) Decrease
(C) Remain constant (D) None of the options
140. The basic automobile structure consists of the suspension system, axles, wheels and
- (A) Power steering (B) Pneumatic Brakes
(C) Lights (D) Frame

141. The vehicle frame may get distorted to parallelogram shape due to
(A) Weight of vehicle
(B) Driven forward or backwards continuously subjected to wheel impact with road obstacles
(C) Weight of passengers
(D) None of the options
142. Shaping of the body below the front bumper to reduce air drag is called as
(A) Rear spoiler
(B) Crumple zone
(C) Air dam
(D) None of the options
143. Piston rings located at top portion of the piston are called as rings
(A) Oil control
(B) Compression
(C) Oil scrapper
(D) None of the options
144. Tank which is designed to catch and hold any coolant that passes through the radiator pressure cap when the engine is hot is called as
(A) Upper tank
(B) Lower tank
(C) Recovery tank
(D) None of the options
145. Heat dissipating capacity of cooling fins outside of engine cylinder barrel is more dependent upon
(A) Fin spacing
(B) Engine temperature
(C) Fin length and cross section
(D) None of the options
146. The role of lead screw in lathe machine is to aid in
(A) Knurling
(B) Spinning
(C) Thread cutting
(D) Surface finishing
147. In hydrodynamic lubrication with increase of shaft speed wedging action of the oil
(A) Increases
(B) Remain same
(C) Decreases
(D) None of the options

148. The parts of the cover assembly that hold the pressure plate against the clutch plate are the
 (A) Release levers (B) Thrust bearing
 (C) Springs (D) None of the options
149. During braking of the vehicle kinetic energy must be absorbed More by
 (A) Front brakes (B) Rear Brakes
 (C) Hand brakes (D) None of the options
150. Chassis arrangement in which engine is mounted in front of the drivers cabin is called
 (A) Conventional (B) Semi forward
 (C) Full forward (D) None of the options
151. By using synchronizing device in gear box, the two adjacent gears/dog clutches have their speeds
 (A) Increased (B) Equalized
 (C) Reduced (D) Unequalized
152. A two piece propeller shaft requires
 (A) One universal joint (B) The shaft to be solid
 (C) Centre support bearing (D) None of the options
153. The output from the car engine is **100 kW**. The thermal efficiency of the engine is **25 %** and heat lost to the coolant is **30 %** of the heat supplied. What is the amount of heat lost to coolant in **kW**?
 (A) 120 (B) 210
 (C) 55 (D) None of the options
154. A car of mass 500 kg is travelling at 36 km/hour. Determine the kinetic energy it possesses
 (A) 50 kJ (B) 100 kJ
 (C) 35 kJ (D) 25 kJ

155. Engine Piston is manufactured with ovality, to cope up with
- (A) Reciprocating motion (B) Structural stress
(C) Thermal expansion (D) None of the options
156. In cooling system, minimum operating temperature of engine is controlled by
- (A) Fan (B) Pump
(C) Thermostat (D) None of the options
157. Sequence of coolant circulation in engine cooling system is
- (A) Pump–radiator-block-head (B) Pump–block-head-radiator
(C) Pump–block-radiator- head (D) Pump–radiator-head-block
158. The primary function of the engine lubrication system is
- (A) Provide cooling effect (B) Provide sealing action
(C) Reduce wear (D) Provide cleaning action
159. Another name for the Pitman rod of steering linkage is
- (A) Track rod (B) Drag link
(C) Tie rod (D) Drop arm
160. In hydraulic braking system the braking force is directly proportional to the
- (A) Viscosity of brake oil
(B) Ratio of cross sectional areas of master cylinder and wheel cylinder
(C) Oil temperature
(D) Friction material
161. In a four stroke cycle, the minimum temperature inside the engine cylinder occurs at the
- (A) Beginning of suction stroke (B) End of suction stroke
(C) Beginning of exhaust stroke (D) End of exhaust stroke
162. The working cycle in case of four stroke engine, is completed in following number of revolutions of the crankshaft
- (A) 1 (B) 2
(C) 3 (D) 1/2

163. In diesel engine fuel is ignited by
(A) Spark
(B) Igniter
(C) Heat resulting from compressing air that is supplied for combustion
(D) None of the options
164. Scavenging process in diesel engine means
(A) Supplying air under pressure for combustion
(B) Supplying air for cooling cylinder
(C) Forcing burnt gases out of the cylinder
(D) None of the options
165. The operation of forcing additional air under pressure in the engine cylinder is known as
(A) Pre-ignition
(B) Turbulence
(C) Supercharging
(D) None of the options
166. The ignition quality of petrol is expressed by
(A) Cetane number
(B) Octane number
(C) Calorific value
(D) All of the options
167. Pre-ignition is caused by the spontaneous combustion of the mixture before the end of the compression stroke, and is due to
(A) Cylinder walls being too hot
(B) Overheated spark plug points
(C) Red hot carbon deposits on cylinder walls
(D) Any one of these
168. In a diesel engine, the duration between the time of injection and ignition, is known as
(A) Burning period
(B) Delay period
(C) Period of ignition
(D) None of the options

169. The self-ignition temperature of petrol is as compared to diesel oil.
(A) Same (B) Lower
(C) Higher (D) None of the options
170. The pressure inside the engine cylinder is the atmospheric pressure during the exhaust stroke
(A) Equal to (B) Below
(C) Above (D) None of the options
171. A carburetor is used to supply
(A) Petrol, air and lubricating oil (B) Air and diesel
(C) Petrol and lubricating oil (D) Petrol and air
172. The ratio of the engine brake power to the indicated power is called
(A) Mechanical efficiency (B) Overall efficiency
(C) Indicated thermal efficiency (D) Volumetric efficiency
173. Morse test is used to determine the indicated power of a
(A) Single cylinder petrol engine (B) Single cylinder diesel engine
(C) Multi-cylinder engine (D) None of the options
174. Spot welding is an example of
(A) Gas welding (B) Arc welding
(C) Resistance welding (D) Tungsten inert gas welding
175. The thermodynamic cycle on which the petrol engine works, is
(A) Otto cycle (B) Joule cycle
(C) Rankine cycle (D) Stirling cycle
176. The function of an alternator in an automobile is to
(A) Supply electric power
(B) Continually recharge the battery
(C) Partly convert engine power into electric power
(D) None of the options

177. The main function of the tread pattern on tyre is that
(A) The crests between the tread grooves absorb road noise
(B) In wet conditions, the tread grooves expel water that is drawn between the tyre and road surface
(C) The tread pattern protects the tyre's inner carcass from small stones and pieces of glass
(D) None of the options
178. With the increase of battery temperature, the specific gravity of electrolyte
(A) Increases (B) Decreases
(C) Remains same (D) None of the options
179. To increase output voltage automotive battery cells are connected in
(A) Series (B) Parallel
(C) Series-parallel (D) None of the options
180. In which DC motors field winding is connected in parallel with the armature
(A) Shunt wound motor
(B) Series wound motor
(C) Shunt and series wound motor
(D) None of the options
181. In a DC generator magnetic field is produced in the
(A) Armature (B) Carbon brushes
(C) Commutator (D) Stator
182. In an alternator the magnetic field is produced in the
(A) Rotor (B) Frame
(C) Regulator (D) Stator
183. The three components of the primary ignition circuit of battery ignition system are
(A) The contact breaker, condenser and distributor cap
(B) The contact breaker, ignition coil and spark plug
(C) The contact breaker, ignition switch and condenser
(D) None of the options

184. The electrical wires are specified by
(A) The colour and length
(B) The length and diameter
(C) The number and size of strands
(D) The colour and diameter
185. Which system from following is most accurate ignition system of a spark ignition engine?
(A) Magneto system (B) Battery system
(C) Electronic system (D) None of the options
186. The advantage of a tubeless tyre over tube type tyre is/are?
(A) Slow air leakage (B) Better fuel efficiency
(C) Less chances of running flat (D) All of the options
187. An overinflated tyre will wear the tread most near the
(A) Edges (B) Centre
(C) Corners (D) None of the options
188. The instrument used to check specific gravity of acid in a battery is
(A) Hydrometer (B) Hygrometer
(C) Anemometer (D) Multimeter
189. The basic purpose of tyres is to
(A) Grip the road and provide good traction
(B) Substitute for springs
(C) Act as brake
(D) None of the options
190. Which part of the automobile tyre is subjected to greatest flexing action?
(A) Bead (B) Side wall
(C) Shoulder (D) Tread

191. The disadvantage of radial ply tyre compared to cross ply tyre is
(A) Uncomfortable ride at slow speeds
(B) Uncomfortable ride at high speeds
(C) Higher cornering power
(D) None of the options
192. The main purpose of transmission in an automobile is
(A) To vary the power of Engine
(B) To vary the torque at road wheels
(C) To reduce the vibration and noise
(D) None of the options
193. The central gear of an epicyclic gear set is called a
(A) Planet gear
(B) Sun gear
(C) Internal gear
(D) None of the options
194. The aspect ratio (expressed in percentage) of the tyre is defined as the ratio of
(A) Wheel diameter to section width
(B) Section width to section height
(C) Section height to section width
(D) Wheel diameter to section height
195. The caster is called positive when the top of the king pin is inclined to the
(A) Front of the vehicle
(B) Left of the vehicle
(C) Right of the vehicle
(D) Rear of the vehicle

196. The device for smoothening out the power impulses from the engine is called
- (A) Clutch (B) Differential
(C) Flywheel (D) None of the options
197. Compared to framed construction, the frameless construction of automobiles is economical
- (A) Always
(B) When produced in small quantities
(C) When produced on large scale
(D) Never
198. In case of four wheel drive vehicle
- (A) Cooling system is simplified
(B) The road adhesion is increased
(C) The road adhesion is decreased
(D) None of the options
199. Before drilling a hole ,its centre is marked with a
- (A) Punch (B) Drill bit
(C) Ring spanner (D) None of the options
200. Tool used for cutting inside threads is called
- (A) Die (B) Cutter
(C) Bender (D) Tap