

A. M. V. I. - Notkn. No: 14/2015

Paper - 2

**Question Paper Name:** Automobile Engineering 8th Nov 2015 Actual  
**Subject Name:** Automobile Engineering  
**Creation Date:** 2015-11-02 10:40:42.0  
**Cut Off:** 0  
**Duration:** 150  
**Number of Questions:** 150  
**Total Marks:** 300.0

Automobile Engineering

Group Number : 1  
Group Id : 23  
Group Maximum Duration : 0  
Group Minimum Duration : 150  
Revisit allowed for view? : No  
Revisit allowed for edit? : No  
Break time: 0  
Group Marks: 300.0

Section Id : 23  
Section Number : 1  
Section type : Online  
Mandatory or Optional: Mandatory  
Number of Questions: 150  
Number of Questions to be attempted: 150  
Section Marks: 300.0

Sub-Section Number: 1  
Sub-Section Id: 35

**Question Number : 1 Question Id : 3301 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Four strokes of an IC engine need \_\_\_ degrees of Crank rotation

**Options :**

1. 720°
2. 360°
3. 540°
4. 180°

**Question Number : 2 Question Id : 3302 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Cetane number of a diesel fuel is measure of its

**Options :**

1. Volatility
2. Viscosity
3. Delay period
4. Ignition quality

**Question Number : 3 Question Id : 3303 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The function of a governor in an automobile is to

**Options :**

1. Limit the power
2. Limit the speed of the engine
3. Effect maximum fuel economy
4. Maintain constant engine speed

**Question Number : 4 Question Id : 3304 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Petrol engine works on

**Options :**

1. Carnot cycle
2. Otto cycle
3. Diesel cycle
4. Joules cycle

**Question Number : 5 Question Id : 3305 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The power available at the Crankshaft for useful work is

**Options :**

1. Indicated power
2. Friction power
3. Brake power
4. Total power

**Question Number : 6 Question Id : 3306 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A square engine

**Options :**

1. has cylinders arranged in square shape
2. has 4 cylinders
3. has cylinder bore equal to stroke length
4. has 2 cylinders horizontal and 2 cylinders vertical

**Question Number : 7 Question Id : 3307 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The friction that occurs between the layers of oil is called

**Options :**

1. Greasy friction
2. Boundary friction
3. Viscous friction
4. Solid friction

Question Number : 8 Question Id : 3308 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Correct sequence of Coolant circulation in an I.C. Engine cooling system is

Options :

1. pump-block-head-radiator
2. pump-radiator-head-block
3. pump-block-radiator-head
4. pump-head-radiator-block

Question Number : 9 Question Id : 3309 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Lean air-fuel mixture is required for

Options :

1. Starting
2. Cruising
3. Idling
4. Acceleration

Question Number : 10 Question Id : 3310 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The process in which hydrocarbons are decomposed into smaller hydrocarbons is called

Options :

1. Cracking
2. Reforming
3. Evaporation
4. Isomerisation

Question Number : 11 Question Id : 3311 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The method of governing used in petrol engines is

Options :

1. qualitative governing
2. hit and miss governing
3. combined governing
4. quantitative governing

Question Number : 12 Question Id : 3312 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Which of the following is correct relation for finding mean effective pressure if Area of indicator diagram (A), Spring Constant (K) and Length of indicator diagram ( l )

Options :

1.  $\frac{A}{K} \times l$
2.  $\frac{A}{l} \times K$
3.  $\frac{K}{A} \times l$
4.  $\frac{K}{lA}$

**Question Number : 13 Question Id : 3313 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The ratio of useful power; friction power; exhaust gas losses; cooling water, air and oil losses for a diesel engine is of the order of

**Options :**

1. 5 : 25 : 30 : 50
2. 25 : 35 : 5 : 35
3. 25 : 5 : 35 : 35
4. 25 : 5 : 10 : 60

**Question Number : 14 Question Id : 3314 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Normal heptane

**Options :**

1. retards auto ignition
2. accelerates auto ignition
3. does not effect auto ignition
4. helps to resist auto ignition

**Question Number : 15 Question Id : 3315 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The thermal efficiency of a 2 - stroke cycle engine as compared to a four stroke cycle engine is

**Options :**

1. less
2. more
3. same
4. more upto certain load and then less

**Question Number : 16 Question Id : 3316 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

An engine has a swept volume of 300 CC. If the compression ratio is 8 : 1, then the clearance volume is

**Options :**

1. 33.33 CC
2. 36.66 CC
3. 42.86 CC
4. 50 CC

**Question Number : 17 Question Id : 3317 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In a 4-stroke 6-cylinder I C engine, the power impulse occurs after 'x' degrees of Crank rotation, where 'x' is

**Options :**

1.  $120^\circ$
2.  $180^\circ$
3.  $90^\circ$
4.  $240^\circ$

**Question Number : 18 Question Id : 3318 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

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Which of the following are correct pair pistons for a 6-cylinder in-line engine

Options :

1. 1-6, 2-5, 3-4
2. 1-2, 3-4, 5-6
3. 1-4, 2-6, 3-5
4. 1-5, 4-6, 2-3

Question Number : 19 Question Id : 3319 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The fins at the top of a motor cycle engine cylinder are longer than those at the bottom because

Options :

1. hot air rises
2. they are in an unexposed position
3. Extra strength is needed at the top
4. Top is the hottest part

Question Number : 20 Question Id : 3320 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

When the no. 1 piston of a 6-cylinder in-line engine is performing suction stroke, the no.6 piston will be performing

Options :

1. suction stroke
2. compression stroke
3. power stroke
4. exhaust stroke

Question Number : 21 Question Id : 3321 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

A pressure relief valve is fitted to the main oil gallery to

Options :

1. limit the maximum oil pressure
2. stop oil flow to bearings at low pressure
3. open when the oil is hot
4. maintain supply if the gallery is blocked

Question Number : 22 Question Id : 3322 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

NO<sub>x</sub> are generated when the temperature in combustion - chamber rises above

Options :

1. 1500° C
2. 1600° C
3. 1700° C
4. 1800° C

Question Number : 23 Question Id : 3323 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Power output of a diesel engine is controlled by



**Options :**

1. Varying the pump timing
2. Varying compression ratio
3. Regulating the quantity of fuel injected
4. Regulating the quantity of air induced

**Question Number : 24 Question Id : 3324 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Function of hand primer during air lock is to

**Options :**

1. supply diesel to engine cylinder
2. supply diesel to injector
3. supply diesel from tank to fuel injection pump
4. supply diesel from FIP to injector

**Question Number : 25 Question Id : 3325 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The part of the piston where gudgeon pin is fixed is called as

**Options :**

1. piston boss
2. ring groove
3. skirt
4. land

**Question Number : 26 Question Id : 3326 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The final drive consists of

**Options :**

1. propeller shaft and bevel pinion
2. rear axle and road wheel
3. gear box and propeller shaft
4. bevel pinion and crown wheel

**Question Number : 27 Question Id : 3327 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A vehicle chassis is designated as 6 x 4, this indicates that

**Options :**

1. The length of chassis is 6 metres and ground clearance is 4 metres
2. The length of chassis is 6 metres and wheel base is 4 metres
3. The total number of wheels is 6 and the 4 wheels are mounted on front axle
4. The total number of wheels is 6 and the driving wheels are 4

**Question Number : 28 Question Id : 3328 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Braking efficiency is generally kept at

**Options :**

1. 30 to 50%
2. 50 to 80%
3. 90 to 100%

4. 100%

**Question Number : 29 Question Id : 3329 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The number of valves provided in the telescopic shock absorber is

**Options :**

1. One
2. Two
3. Three
4. Four

**Question Number : 30 Question Id : 3330 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A car with a closed body and with less than 4 seats is called

**Options :**

1. Coupe
2. Saloon
3. Limousine
4. Station wagon

**Question Number : 31 Question Id : 3331 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The instrument used to note the deflection of the frame in bending test is

**Options :**

1. Vernier Caliper
2. Dial gauge
3. Screw gauge
4. Depth gauge

**Question Number : 32 Question Id : 3332 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The most widely used type of stub axle used in heavy vehicles

**Options :**

1. Elliot type
2. Lamoine type
3. Reversed elliot type
4. Reversed Lamoine type

**Question Number : 33 Question Id : 3333 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Propeller shaft is subjected to

**Options :**

1. Torsional loads
2. Bending loads
3. Both bending and torsional loads
4. Torsional loads and Vibrations

**Question Number : 34 Question Id : 3334 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In the hydraulic braking system, the force exerted on the piston in the master cylinder is transmitted to the brakeshoe by

**Options :**

1. Cables
2. Springs
3. Actuating pins
4. Trunnions

**Question Number : 35 Question Id : 3335 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

When compared to leaf springs, the energy stored in a torsion bar is

**Options :**

1. equal
2. double
3. half
4. four times

**Question Number : 36 Question Id : 3336 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In steering mechanism a drag link connects

**Options :**

1. drop arm and tie rod
2. drop arm and steering arm
3. drop arm and track rod
4. drop arm and link rod

**Question Number : 37 Question Id : 3337 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The chassis where the engine is mounted completely inside the driver's cabin

**Options :**

1. Conventional chassis
2. Integral type chassis
3. Semi-forward chassis
4. Fully forward chassis

**Question Number : 38 Question Id : 3338 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In a tubeless tyre

**Options :**

1. It takes more time for repairing
2. a repaired and replaced tyre gives a good air tight joint
3. a non-return valve is fitted to the bottom of tyre
4. air leakage is slow when tyre is punctured by a nail as long as it remains in the tyre

**Question Number : 39 Question Id : 3339 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In a torque tube drive, the torque tube takes

**Options :**

1. Vehicle weight and torque reaction
2. Side thrust and vehicle weight



- 3. Torque reaction and drive shaft reaction
- 4. Side thrust and torque reaction

**Question Number : 40 Question Id : 3340 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The rear axle half shaft is connected to

**Options :**

- 1. Sun gear
- 2. Crown wheel
- 3. Drive pinion
- 4. Differential cage

**Question Number : 41 Question Id : 3341 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The pitman arm in the steering gear is linked to the front wheel through the

**Options :**

- 1. Track rod
- 2. Drag link
- 3. Tie rod
- 4. Steering knuckle

**Question Number : 42 Question Id : 3342 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The kingpin inclination is usually

**Options :**

- 1. Less than  $1/2^\circ$
- 2. Between  $1/2^\circ$  to  $2^\circ$
- 3.  $2^\circ$  to  $5^\circ$
- 4.  $7^\circ$  to  $9^\circ$

**Question Number : 43 Question Id : 3343 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The following anti roll device is used in independent suspension system

**Options :**

- 1. Torsion bar
- 2. Torque rod
- 3. Stabilizer bar
- 4. Wishbone arm

**Question Number : 44 Question Id : 3344 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Coil springs are

**Options :**

- 1. good in shear load and weak in bending loads
- 2. good in side thrust and weak in bending loads
- 3. good in both shear load and side thrust
- 4. good in shear load and weak in side thrust

Question Number : 45 Question Id : 3345 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Toggle lever is used in

Options :

1. Mechanical brakes
2. Air brakes
3. Hydraulic brakes
4. Electric brakes

Question Number : 46 Question Id : 3346 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The central part of the front axle is provided with

Options :

1. forward sweep
2. backward sweep
3. upward sweep
4. downward sweep

Question Number : 47 Question Id : 3347 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The main purpose of double reduction in final drive is to

Options :

1. decrease the size of crown wheel
2. avoid the use of differential cage
3. reduce the size of the road wheel
4. reduce the size of the drive pinion

Question Number : 48 Question Id : 3348 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Clutch is not transmitting any power from the engine to the gear box. The problem is called

Options :

1. Clutch slipping
2. Clutch chattering
3. Clutch dragging
4. Clutch grabbing

Question Number : 49 Question Id : 3349 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Free wheel unit is mounted between

Options :

1. clutch and gear box
2. engine and clutch
3. gear box and propeller shaft
4. propeller shaft and rear axle

Question Number : 50 Question Id : 3350 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

When taking a turn, the differential without differential lock supplies

Options :

1. More torque to outer wheel

2. Less torque to outer wheel
3. Equal torque to both inner and outer wheels
4. No torque to the inner wheel

**Question Number : 51 Question Id : 3351 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A fully charged battery has specific gravity of electrolyte

**Options :**

1. 1.280
2. 2.50
3. 1.820
4. 1.50

**Question Number : 52 Question Id : 3352 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A 14mm spark plug has

**Options :**

1. Threaded length of 14 mm
2. A reach of 14 mm
3. Threaded diameter of 14 mm
4. Heat path of 14 mm

**Question Number : 53 Question Id : 3353 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The disadvantage of alternator is

**Options :**

1. Output to weight ratio is less
2. High initial cost
3. Maximum output is less
4. Poor current output characteristics

**Question Number : 54 Question Id : 3354 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Which tool is used for tightening cylinder head nuts

**Options :**

1. DE spanner
2. Tubular spanner
3. Ring spanner
4. Torque wrench

**Question Number : 55 Question Id : 3355 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Contact breaker point gap should be maintained at

**Options :**

1. 0.1 to 0.2 mm
2. 0.2 to 0.3 mm
3. 0.3 to 0.5 mm
4. 0.4 to 0.8 mm

**Question Number : 56 Question Id : 3356 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

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In a horn circuit, when the contact points are closed, the current flows through

Options :

1. low current wire
2. high current wire
3. high voltage coil
4. low voltage coil

Question Number : 57 Question Id : 3357 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The optimum electrode temperature of sparkplug is

Options :

1. 300 to 500 °C
2. 500 to 600 °C
3. 600 to 800 °C
4. 800 to 1000 °C

Question Number : 58 Question Id : 3358 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

In over running clutch \_\_\_ is provided to actuate the starter switch on self starter

Options :

1. Collar
2. A high tension spring
3. Shift lever
4. rubber brush

Question Number : 59 Question Id : 3359 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

If resistors of 10 Ohms, 20 Ohms are connected in parallel-mesh then the equivalent resistance is

Options :

1. 50/3 Ohms
2. 35/3 Ohms
3. 30 Ohms
4. 20/3 Ohms

Question Number : 60 Question Id : 3360 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Which valve is used in air compressor to regulate pressure in the reservoirs?

Options :

1. Check valve
2. Spool valve
3. Unloader valve
4. Inlet valve

Question Number : 61 Question Id : 3361 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Steering pulling or wobbling is due to

Options :

1. Worn out cylinder

2. Worn out piston
3. Loosened clutch cable
4. Less tyre pressure

**Question Number : 62 Question Id : 3362 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Ignition timing mark is provided on

**Options :**

1. Crank shaft
2. Cam shaft
3. Fly wheel
4. Pressure plate

**Question Number : 63 Question Id : 3363 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Engine overheating may result due to

**Options :**

1. Radiator pressure cap stuck closed
2. Thermostat stuck open
3. Broken fan belt
4. Excess coolant in the system

**Question Number : 64 Question Id : 3364 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Which motor can be used as a self starter?

**Options :**

1. Any AC motor
2. DC compound motor
3. DC shunt motor
4. DC series motor

**Question Number : 65 Question Id : 3365 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The hoist comprises a platform, which is fixed on the top of ram working on

**Options :**

1. Hydraulic cylinder
2. Master cylinder
3. Oil cylinder
4. Pneumatic cylinder

**Question Number : 66 Question Id : 3366 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In cutout, the current coil is

**Options :**

1. Shunt wound and made of thin wire
2. Series wound and made of thick wire
3. Series wound and made of thin wire
4. Shunt wound and made of thick wire

**Question Number : 67 Question Id : 3367 Question Type : MCQ**



Correct : 2.0 Wrong : 0.0

Condenser is provided to

Options :

1. prevent sudden arcing between spark plug electrodes
2. allow arcing between the C.B. Point
3. prevent arcing between the C.B. point
4. allow the arcing between the spark plug electrodes

Question Number : 68 Question Id : 3368 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The middle finger of Fleming's left hand rule represents

Options :

1. direction of force
2. direction of current
3. direction of magnetic field
4. capacitance

Question Number : 69 Question Id : 3369 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The produced current in d.c. generator is collected by

Options :

1. Armature
2. Pole core
3. Commutator
4. Pole shoe

Question Number : 70 Question Id : 3370 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The electronic ignition system has a module kit that improves

Options :

1. The C.B. Points performance
2. The condenser performance
3. The coil performance
4. The battery performance

Question Number : 71 Question Id : 3371 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Apart from hydrocarbons, the main pollutants in the engine exhaust are

Options :

1. CO and CO<sub>2</sub>
2. CO<sub>2</sub> and NO<sub>x</sub>
3. CO and NO<sub>x</sub>
4. CO<sub>2</sub> and H<sub>2</sub>O

Question Number : 72 Question Id : 3372 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The main reason for CO emission is due to

Options :

1. High amount of air in the air fuel mixture

2. Less amount of air in the air fuel mixture
3. High amount of hydrogen in the air fuel mixture
4. Less amount of hydrogen in the air fuel mixture

**Question Number : 73 Question Id : 3373 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Soot formation is due to the lack of \_\_\_\_ in combustion chamber during fuel burning

**Options :**

1. Oxygen
2. Nitrogen
3. Hydrogen
4. Sulphur

**Question Number : 74 Question Id : 3374 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The warpage of cylinder head is checked with a

**Options :**

1. metal rule
2. vernier caliper
3. micro meter
4. dial gauge

**Question Number : 75 Question Id : 3375 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The cylinder bore oversize for reboring is calculated on the basis of

**Options :**

1. minimum ovality in any cylinder
2. maximum ovality in any cylinder
3. average value of ovality in the cylinder
4. size of the piston available

**Question Number : 76 Question Id : 3376 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Duty Roaster is related to

**Options :**

1. Crew Duties
2. Bus timings
3. Bus frequency
4. Bus schedule

**Question Number : 77 Question Id : 3377 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The daily maintenance time for a Bus varies from

**Options :**

1. 4 to 6 hrs
2. 2 to 3 hrs
3. 1 to 2 hrs
4. 4 to 5 hrs

**Question Number : 78 Question Id : 3378 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

Break-even analysis consists of

Options :

1. Fixed costs
2. Variable costs
3. Operation costs
4. Fixed costs and Variable costs

Question Number : 79 Question Id : 3379 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Gantt charts are used for

Options :

1. production schedule
2. sales forecasting
3. scheduling and routing
4. linear programming

Question Number : 80 Question Id : 3380 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

PERT stands for

Options :

1. Programme Examination and Review Technique
2. Programme Evaluation and Review Technique
3. Project Evaluation and Reporting Technique
4. Process Evaluation and Reporting Technique

Question Number : 81 Question Id : 3381 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The stand time at both terminals is given as

Options :

1. 5% of running time
2. 10% of running time
3. 15% of running time
4. 20% of running time

Question Number : 82 Question Id : 3382 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Frequency of a service can be calculated by

Options :

1.  $\frac{RT - ST}{N}$
2.  $\frac{RT}{N + ST}$
3.  $\frac{RT + N}{ST}$
4.  $\frac{RT + ST}{N}$

Question Number : 83 Question Id : 3383 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

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The service that is operated when a vehicle breakdown enroute

**Options :**

1. Express service
2. Luxury service
3. Relief service
4. Ordinary service

**Question Number : 84 Question Id : 3384 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

The Motor Vehicle Act in India was introduced in the year

**Options :**

1. 1936
2. 1935
3. 1949
4. 1939

**Question Number : 85 Question Id : 3385 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

The wastage of material in the store is taken into account by the following method in the evaluation of the material issued from the stores

**Options :**

1. Current value method
2. Variable price method
3. Primary cost method
4. Inflated system

**Question Number : 86 Question Id : 3386 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

The time which results in the least possible direct cost of an activity is known as

**Options :**

1. Normal time
2. Standard time
3. Slow time
4. Crash time

**Question Number : 87 Question Id : 3387 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

Scheduling gives information about

**Options :**

1. when work should complete
2. how the idle time can be minimised
3. when work should start and how much work should be completed during a certain period
4. proper utilisation of machines

**Question Number : 88 Question Id : 3388 Question Type : MCQ**

Correct : 2.0 Wrong : 0.0

Graphical method, Simplex method and Transportation methods are concerned with

**Options :**

1. Linear programming



2. Break-even analysis
3. Queing theory
4. Value analysis

**Question Number : 89 Question Id : 3389 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Work cost implies

**Options :**

1. Factory cost
2. Factory expenses
3. Primary cost
4. Primary cost + Factory expenses

**Question Number : 90 Question Id : 3390 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

CPM has following time estimates

**Options :**

1. Two time estimates
2. One time estimate
3. Three time estimates
4. Four time estimates

**Question Number : 91 Question Id : 3391 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The maximum number of spells of duty for Crew in a day is

**Options :**

1. 3
2. 4
3. 2
4. 5

**Question Number : 92 Question Id : 3392 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Fleet utilization will show efficiency of

**Options :**

1. Security wing
2. Traffic department
3. Administration
4. Engineering department

**Question Number : 93 Question Id : 3393 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

According to Rowan plan, if H=hourly rate, A=actual time and S=standard time, then wages will be

**Options :**

1. HA

2.  $HA + \frac{(S-A)}{S} HA$

- 2.

3.  $HA + \frac{(S-A)}{2} H$

- 3.



$$HA + \frac{(S-A)}{S}H$$

Question Number : 94 Question Id : 3394 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The colour indication of informatory signs

Options :

1. Blue
2. Black
3. Red
4. Green

Question Number : 95 Question Id : 3395 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Cautionary signs are indicated in

Options :

1. Circle
2. Rectangle
3. Triangle
4. Square

Question Number : 96 Question Id : 3396 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Break-even point can be calculated by using the relation, where F=Total Fixed costs, S=Total Sales Volume, V = Total Variable costs.

Options :

1.  $\frac{F}{V}$

2.  $\frac{F}{1-\frac{V}{S}}$

3.  $\frac{F}{F-\frac{S}{V}}$

4.  $\frac{F}{\frac{S}{V}-F}$

Question Number : 97 Question Id : 3397 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

ABC analysis in material management deals with

Options :

1. analysis of process chart
2. flow of material
3. ordering schedule of job
4. controlling inventory costs

Question Number : 98 Question Id : 3398 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

If  $t_o$ ,  $t_m$  and  $t_p$  represent the Optimistic, most probable and pessimistic time for a project, then by probability analysis, most probable expected time  $t_e =$

Options :

1.  $\frac{t_o + 4t_m + t_p}{6}$

2.  $\frac{t_o + 6t_m + t_p}{6}$

3.  $\frac{t_o + 6t_m + 4t_p}{6}$

4.  $\frac{2t_o + 4t_m + t_p}{6}$

Question Number : 99 Question Id : 3399 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Salvaging means

Options :

1. adjusting losses against assets
2. mortgaging property
3. disposing off property which is no longer useful in present situation
4. disposing off property in as such condition

Question Number : 100 Question Id : 3400 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

A dealer sells a set of tools for Rs.900 which is 80% more than he paid for it. At what price must he sell the same set to make 120% on the cost?

Options :

1. Rs.900
2. Rs.1000
3. Rs.1100
4. Rs.1200

Question Number : 101 Question Id : 3401 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Which of the following tractor is based on type of drive

Options :

1. Industrial tractor
2. Full track tractor
3. Row Crop tractor
4. Earth moving tractor

Question Number : 102 Question Id : 3402 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

An ideal fluid is

Options :

1. similar to perfect gas
2. Frictionless and incompressible
3. One which satisfies continuity equation

4. One which obeys Newton's law of viscosity

**Question Number : 103 Question Id : 3403 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Tippers are used for

**Options :**

1. Long hauling jobs
2. Small hauling jobs
3. Carrying garbage
4. Carrying hard rock to long distance

**Question Number : 104 Question Id : 3404 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The depth of soil cut can be set by

**Options :**

1. straight handle
2. Drag link
3. depth wheel
4. depth locator

**Question Number : 105 Question Id : 3405 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Mass density of liquid is given by

**Options :**

1. mass x volume

$\frac{mass}{volume}$

2.  $\frac{mass}{volume}$
3. specific gravity / mass

$\frac{volume}{mass}$

4.  $\frac{volume}{mass}$

**Question Number : 106 Question Id : 3406 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A hydraulic Jack is a device used to

**Options :**

1. store pressure energy which may be supplied to a machine later on
2. increase the intensity of pressure of water by means of energy available from a large quantity of water at low pressure
3. lift larger load by the application of a comparatively much small force
4. decrease the pressure energy which is supplied to the machine

**Question Number : 107 Question Id : 3407 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Mechanical differential lock is operated by

**Options :**

1. Manual system
2. Automatic system
3. Servo system
4. Electrical system

Question Number : 108 Question Id : 3408 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The purpose of belt pulley is to

Options :

1. run the plough
2. run the water pumps and threshers
3. supply hydraulic fluid to steering
4. To control differential unit

Question Number : 109 Question Id : 3409 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The dynamic viscosity of most gases with rise in gas temperature

Options :





1. Increases
2. Decreases as  $\propto T$
3. Doesnot change significantly
4. Drecreases

Question Number : 110 Question Id : 3410 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Which of the following symbols is used to represent air compressor in a pneumatic circuit

Options :

1. 
2. 
3. 
4. 

Question Number : 111 Question Id : 3411 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The motion of shaft in a circular hole is an example of

Options :

1. completely constrained motion
2. Incompletely constrained motion
3. Successfully constrained motion
4. Simple harmonic motion

**Question Number : 112 Question Id : 3412 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A flat belt drive is

**Options :**

1. not a positive drive
2. positive drive
3. used for high torque transmission only
4. Used only when the two shafts have parallel axis

**Question Number : 113 Question Id : 3413 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Moment of inertia of a rectangular section having width (b) and depth (d) about an axis passing through its C.G and parallel to depth (d) is

**Options :**

1.  $\frac{bd^3}{12}$
2.  $\frac{db^3}{12}$
3.  $\frac{db^3}{24}$
4.  $\frac{bd^3}{36}$

**Question Number : 114 Question Id : 3414 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Two forces of 6N and 8N act at right angles to each other, the resultant force will be

**Options :**

1. 48 N
2. 14 N
3. 24 N
4. 10 N

**Question Number : 115 Question Id : 3415 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The ratio of static friction to dynamic friction is always

**Options :**

1. greater than one
2. less than one
3. equal to one
4. half



Question Number : 116 Question Id : 3416 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Poisson's ratio for cast iron is

Options :

1. 0.33
2. 0.36
3. 0.15
4. 0.27

Question Number : 117 Question Id : 3417 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The centre of gravity of a T-section 100 mm x 150 mm x 30 mm

Options :

1. 50 mm
2. 94.1 mm
3. 75.6 mm
4. 120 mm

Question Number : 118 Question Id : 3418 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The moment of inertia of a triangular section of base (b) and height (h) about an axis through its base is

Options :

1.  $\frac{bh^3}{4}$
2.  $\frac{bh^3}{8}$
3.  $\frac{bh^3}{36}$
4.  $\frac{bh^3}{12}$

Question Number : 119 Question Id : 3419 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The point of inflexion is a point where

Options :

1. bending moment changes sign
2. shear force changes sign
3. shear force is maximum
4. bending moment is maximum

Question Number : 120 Question Id : 3420 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Two forces of each equal to  $T/2$  act at right angles. Their effect may be neutralized by a third force acting along their bisector in the opposite direction with a magnitude of

Options :

1. T
2.  $T/2$

3.  $W \tan \theta$

4.  $W \tan (\theta + \phi)$

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**Question Number : 121 Question Id : 3421 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A body of weight  $W$  is required to move up on rough inclined plane whose angle of inclination with the horizontal is  $\theta$ . The effort applied parallel to the plane is given by

**Options :**

1.  $P = W \tan \theta$
2.  $P = W \tan (\theta + \phi)$
3.  $P = W(\sin \theta + \mu \cos \theta)$
4.  $P = W (\cos \theta + \mu \sin \theta)$

**Question Number : 122 Question Id : 3422 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The difference between a machine and a structure is

**Options :**

1. The machine serves to modify and transmit forces only where as structures serve to modify and transmit mechanical work.
2. Structures are temporary constructions where as machines are permanent construction
3. The relative motion exists between the parts structure where as it doesnot exist in machine
4. The machine serves to modify and transmit mechanical work where as structure serve to modify and transmit forces only

**Question Number : 123 Question Id : 3423 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

When a bar lengthened or shortened by a load, it simultanously becomes narrower or wider. The ratio of this strain in the direction of width to the simultanous strain in the direction of the length is called

**Options :**

1. Young's modulus
2. Hooke's ratio
3. Poisson's ratio
4. Euler's ratio

**Question Number : 124 Question Id : 3424 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The moment of inertia for a rectangular section 3 cm wide 4 cm deep about x-x axis is

**Options :**

1.  $9 \text{ cm}^4$
2.  $16 \text{ cm}^4$
3.  $12 \text{ cm}^4$
4.  $20 \text{ cm}^4$

**Question Number : 125 Question Id : 3425 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The bending moment in the centre of a simply supported beam carrying uniformly distributed load of  $W$  per unit length is

**Options :**

1. Zero

2.  $\frac{wl^2}{2}$

3.  $\frac{wl^2}{4}$

4.  $\frac{wl^2}{8}$

Question Number : 126 Question Id : 3426 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Eye bolts are used for

Options :

1. Locking devices
2. Transmission of power
3. Absorption of shocks and vibrations
4. Lifting and transporting heavy pieces

Question Number : 127 Question Id : 3427 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

In the case of a fly wheel the maximum fluctuation of energy is the

Options :

1. Sum of maximum and minimum energies
2. Ratio of maximum and minimum energies
3. Ratio of minimum and maximum energies
4. Difference between the maximum and minimum energies

Question Number : 128 Question Id : 3428 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Two shafts A and B are made of the same material. The diameter of shaft B is twice that of shaft A. The ratio of power which can be transmitted by shaft A to the shaft B is

Options :

1. 1/2
2. 1/4
3. 1/8
4. 1/16

Question Number : 129 Question Id : 3429 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

A key connecting a flange coupling to a shaft is likely to fail in

Options :

1. Shear
2. Tension
3. Torsion
4. Bending

Question Number : 130 Question Id : 3430 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The gear train usually employed in clocks

Options :

1. simple gear train
2. differential gear
3. reverted gear train
4. sun and planet gear

**Question Number : 131 Question Id : 3431 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In radial Cams the follower moves

**Options :**

1. in a direction perpendicular to the Cam axis
2. in a direction parallel to the Cam axis
3. in any direction irrespective of a Cam axis
4. along the Cam axis

**Question Number : 132 Question Id : 3432 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A bolt of M 24 x 2 means that

**Options :**

1. The pitch of the thread is 24mm and depth is 2mm
2. Cross sectional area of the threads is  $24\text{mm}^2$
3. the effective diameter of bolt is 24mm and there are 2 threads per cm
4. The nominal diameter of bolt is 24mm and pitch is 2mm

**Question Number : 133 Question Id : 3433 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The outside diameter of a hollow shaft is twice its inside diameter. The ratio of the torque carrying capacity to that of a solid shaft of the same material and of the same outside diameter is

**Options :**

1.  $3/4$
2.  $15/16$
3.  $1/2$
4.  $11/16$

**Question Number : 134 Question Id : 3434 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Large speed reduction (greater than 20) in one stage of a gear train are possible through

**Options :**

1. Spur gearing
2. Worm gearing
3. Bevel gearing
4. Helical gearing

**Question Number : 135 Question Id : 3435 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The pitch point of Cam is

**Options :**

1. a point on the pitch curve having minimum pressure angle
2. any point on the pitch curve
3. any point on the pitch circle
4. a point on the pitch curve having maximum pressure angle



**Question Number : 136 Question Id : 3436 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Annealing of white cast iron results in the production of

**Options :**

1. Nodular cast iron
2. Spheroidal cast iron
3. Gray cast iron
4. Malleable cast iron

**Question Number : 137 Question Id : 3437 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Dressing of grinding wheels to restore sharpness is done by

**Options :**

1. Solid carbon steel bar
2. Tool steel dresser
3. Sharped edge H.S.S. cutter
4. Diamond dresser

**Question Number : 138 Question Id : 3438 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

A portable drilling machine is specified by

**Options :**

1. Spindle speeds and feeds
2. Size of the table
3. Maximum diameter of drill it can hold
4. Maximum spindle travel

**Question Number : 139 Question Id : 3439 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Eutectoid steel contains following percentage of carbon

**Options :**

1. 0.02%
2. 0.3%
3. 0.63%
4. 0.8%

**Question Number : 140 Question Id : 3440 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In straight polarity welding

**Options :**

1. Holder is positive and work is earthed
2. Electrode holder is connected to the negative and work to positive
3. Work is positive and holder is earthed
4. Electrode holder is connected to the positive and work to negative

**Question Number : 141 Question Id : 3441 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Case hardening is the only method suitable for hardening

**Options :**



1. Low carbon steel
2. High alloy steel
3. High carbon steel
4. High speed steel

**Question Number : 142 Question Id : 3442 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Hardenability of steel

**Options :**

1. is its ability to withstand shocks
2. is the ability of steel to resist abrasion, wear and penetration
3. is the property which determines the depth of the hardened zone induced by quenching
4. is achieved throughout its full depth, when the actual cooling rate equals the critical cooling rate

**Question Number : 143 Question Id : 3443 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Gear hobbing process is faster than milling because

**Options :**

1. Work rotates faster
2. Hob rotates faster
3. Indexing time is less
4. Several teeth cut at a time

**Question Number : 144 Question Id : 3444 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

In order to perform taper turning operation of entire length  $l$ , with two end diameters  $d_1$  and  $d_2$ , the tail stock set over required is

**Options :**

1.  $\frac{d_1 - d_2}{2l}$
2.  $\frac{d_1 - d_2}{l}$
3.  $\frac{d_1 - d_2}{2}$
4.  $\frac{(d_1 - d_2)2}{l}$

**Question Number : 145 Question Id : 3445 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

The increase in hardness due to cold working is called

**Options :**

1. Age hardening
2. Work hardening
3. Induction hardening
4. Flame hardening

**Question Number : 146 Question Id : 3446 Question Type : MCQ**

**Correct : 2.0 Wrong : 0.0**

Austenite is a combination of

Options :

1. Ferrite and pearlite
2. Cementite and gamma iron
3. Pearlite and cementite
4. Ferrite and cementite

Question Number : 147 Question Id : 3447 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

Brinnell hardness number is expressed by the equation

Options :

$$BHN = \frac{2L}{\pi D(D - \sqrt{D^2 - d^2})}$$

1.

$$BHN = \frac{L}{\pi D(D - \sqrt{D^2 - d^2})}$$

2.

$$BHN = \frac{2L}{\pi D(D + \sqrt{D^2 - d^2})}$$

3.

$$BHN = \frac{L}{\pi D(D + \sqrt{D^2 - d^2})}$$

4.

Question Number : 148 Question Id : 3448 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The method of centreless grinding used to produce taper is

Options :

1. In feed grinding
2. Through feed grinding
3. End feed grinding
4. Cylindrical grinding

Question Number : 149 Question Id : 3449 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

In a planer

Options :

1. Tool moves over reciprocating work
2. Tool moves over stationary work
3. Work is stationary and tool reciprocates
4. Tool is stationary and work reciprocates

Question Number : 150 Question Id : 3450 Question Type : MCQ

Correct : 2.0 Wrong : 0.0

The cutting tool in a milling machine is mounted on

Options :

1. Spindle
2. Column
3. Tool holder
4. Arbor