1. In dry sump lubrication system, a scavenging pump is used to

1. pump oil from sump to tank 2. pump oil directly to all moving parts

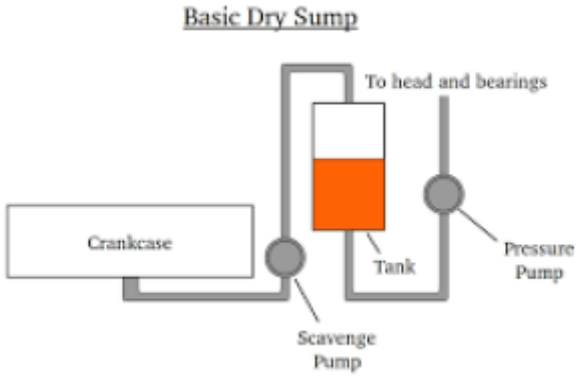
3. develop additional oil pressure 4. pump oil from tank to sump

Ans: 1

RECIPROCATING ENGINE LUBRICATION SYSTEMS – DRY SUMP OIL SYSTEM

The principal units in a typical reciprocating engine dry sump oil system include an oil supply tank, an engine-driven pressure oil pump, a scavenge pump, an oil cooler with an oil cooler control valve, oil tank vent, necessary tubing, and pressure and temperature indicators.

https://www.flight-mechanic.com/reciprocating-engine-lubrication-systems-dry-sump-oil-systems/



WHAT IS PRESSURE LUBRICATION?

Pressure lubrication (also known as injection lubrication) is a form of lubrication that uses one or more pumps to deliver oil to the lubrication points. The lubricant is distributed throughout the oil circuit. It is the most commonly used lubrication in engines. However, it is also used in other components such as gearboxes or compressors. In the case of pressure lubrication, wet sump lubrication, in which the oil supply is collected and stored in the oil sump, is the most common design. Pressure lubrication can be divided into two systems, wet sump lubrication and dry sump lubrication. Both are possible, but differ in the application, storage of the oil supply and delivery of the oil.

In a **dry sump**, extra oil is stored in a tank outside the engine rather than in the oil pan. There are at least two oil pumps in a dry sump -- one pulls oil from the sump and sends it to the tank, and the other takes oil from the tank and sends it to lubricate the engine. The minimum amount of oil possible remains in the engine.

https://auto.howstuffworks.com/fuel-efficiency/fuel-consumption/question331.htm

2. The efficiency of internal combustion engine ranges from

1. 15% to 35%
2. 20% to 40%
3. 25% to 30%
4. 30% to 35%

Ans: 3

The efficiency of a heat engine is defined as ratio of the useful **work done** to the heat provided.

$$\eta = \frac{\text{work done}}{\text{heat absorbed}} = \frac{Q_1 - Q_2}{Q_1}$$

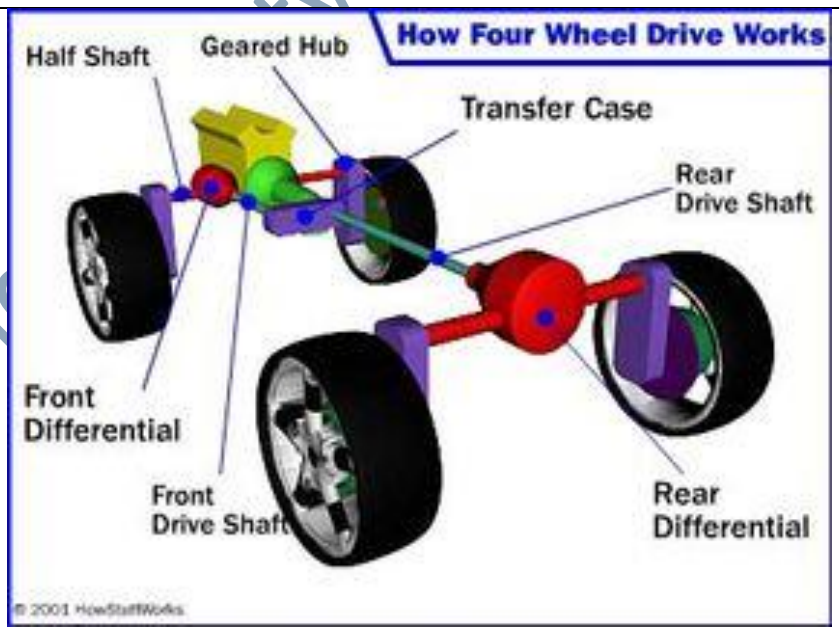
where, Q_1 is the heat absorbed and $Q_1 - Q_2$ is the work done.

3. Which of the following component is used for engaging front wheel drive?

1. locking hub
2. low range gear
3. high range gear
4. primary gear box shaft

Ans:

https://www.popularmechanics.com/cars/how-to/a250/1302716/



https://auto.howstuffworks.com/four-wheel-drive4.htm

4. The wiper motor receives current from the

1. dynamo 2. starter motor 3. Wiper motor 4. battery

Ans: 3

WHAT IS WIPER MOTOR?

The car wiper motor is the component that powers the windshield wipers. As it spins, a mechanism built to it rotates a worm gear, arm and, finally, the windshield or windscreen wiper blades. The wiper blades then rid the windscreen of water, snow, dust, or any other debris that may affect visibility when driving.

TYPES OF WIPER MOTOR

Vehicle wiper motors are available in several different types. These are generally based on the design, voltage rating, and location. In light of that, the types of wiper motor versions you will come across in the automotive world are: permanent magnet and field wound wiper motor, 6V, 12V, and 24V wiper motor, front and back wiper motor, and the universal windshield wiper motor.

Permanent Magnet and Field-Wound Wiper Motor

The windshield wiper motor in modern automobiles uses permanent magnets. Permanent magnets make quiet and efficient motors. They are also low-cost and reliable. Permanent windshield wiper motors are generally recognized by their characteristic cylinder shape.

If car is a pre-70's model, the wiper motor is likely to use field coils instead of a permanent magnets. These types of wiper motor were popular due to the inadequacies of the permanent magnets at that time.

Windshield wiper motors are usually available as 12V and 24V options. The 12V DC wiper motor is the most common today and runs off the conventional 12V car battery. The 24V wiper motor is also used, although not as popularly. A 12V DC windshield wiper motor mainly differs from the 24V version in terms of current draw. The 24V version uses less current to produce the same amount of power, which makes it more efficient. For most applications, though, the 12 volt motor is suitable.

https://mzwmotor.com/wiper-motor-guide/

5. Cemented carbide is made of

1. Carbon, tungsten and titanium 2. Cobalt, tungsten and titanium
3. cobalt and tungsten carbide. 4. Carbon, tantalum and niobium

Ans: 3 (Cemented carbides commonly use tungsten carbide (WC), titanium carbide (TiC), or tantalum carbide (TaC) as the aggregate).

Cemented carbide is an alloy of tungsten carbide (WC) and cobalt (Co). WC is the main ingredient and the cobalt functions as an adhesive/binder metal. Generally, as the WC particles become smaller, the material becomes harder. The more cobalt, the lower the level of hardness. Cemented carbide is hard but fragile, therefore it is important to consider the balance of hardness and toughness according to the intended use.

http://www.mitsubishicarbide.com/en/magazine/article/vol03/tec_vol03

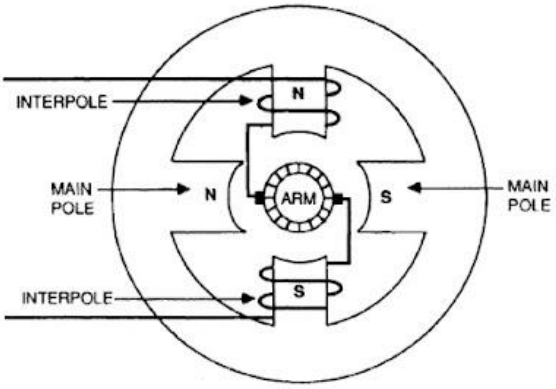
6. In a DC. motor, the shaft torque is less than armature torque. This is due to
   1. eddy current loss
   2. hysteresis loss
   3. iron and friction losses
   4. all the three

   Ans: 3

7. The function of interpoles in a D.C. machine is to
   1. reduce field winding heating
   2. improve commutation
   3. reduce losses
   4. compensate for air gap variation

   Ans: 2

Interpoles are designed in DC motors to overcome the effects of the armature reactance and the self-induction of the machine. Most shunt and compound DC motors over one-half horsepower have interpoles located 90 electrical degrees from the main poles. Some motor designs use only one interpole with satisfactory results. Interpoles are wired in series with the armature. Any changes in the armature current due to armature reactance, loading, or self-inductance pass through the interpole windings. This creates a changing magnetic field equal to and opposite that of the armature, thereby cancelling the effect. Interpoles are narrow poles placed at the GNA and fitted to the Yoke and also known as Commutating Poles or Compoles. For generator, the polarity of Interpoles must be same as that of main Pole ahead of it in the direction of rotation. For Motor, the polarity of Interpole must be same as that of Main Pole behind it



https://www.sciencedirect.com/topics/engineering/interpole

8. The back e.m.f. of the D.C. machine is to
   1. opposes the applied voltage
   2. has no effect on the applied voltage
   3. favours the applied voltage
   4. none of the tree are correct

   Ans: 1

9. Five people must be lifted in an elevator over a height of 100 m. The work is found to be 341.2 KJ and the gravitational acceleration is 9.75m/sec^2. The average mass per person is
   1. 65kg
   2. 72kg
   3. 70kg
   4. 67.5kg

   Ans: 3 (Potential energy, mgh = 341.2 KJ where h = 100 m)

10. The internal energy of an ideal gas is
    1. A function of temperature alone
    2. a function of pressure
    3. A function of volume
    4. (1) and (2) above

    Ans: 1

11. The major constituents of a hydrocarbon fuels except solid fuels are
    1. Carbon, Hydrogen and Oxygen
    2. Carbon, Hydrogen Oxygen and Nitrogen
    3. Carbon, Hydrogen Oxygen and Sulphur
    4. Carbon, and Hydrogen

    Ans: 4 (Coal is mostly carbon with variable amounts of other elements, chiefly hydrogen, sulfur, oxygen, and nitrogen. Most hydrocarbon fuels contain trace amounts of sulphur.)

    Hydrocarbon, any of a class of organic chemical compounds composed only of the elements carbon (C) and hydrogen (H). The carbon atoms join together to form the framework of the compound, and the hydrogen atoms attach to them in many different configurations. Hydrocarbons are the principal constituents of petroleum and natural gas.

12. The quantity control method of governing is used in
    1. Diesel engines
    2. Rocket engines
    3. Petrol engines
    4. Steam engines

    Ans: 3.

GOVERNING (SPEED CONTROL) SYSTEM

The term governing implies keeping the engine speed constant regardless of the charges on the load of the engine. Speed control is essential in stationary engines used for driving electrical generators, pumps and compressors that are to operate at constant speed irrespective of the load.The methods used for governing the IC engine are quantity governing, quality governing and, the hit and miss governing.

QUANTITY GOVERNING IN SI /PETROL ENGINES

In this type of governing, the quantity of the mixture supplied to the engine is changed in accordance with load on the engine; the mixture strength(air-fuel ratio) remains same. The control is accomplished by means of throttle valve which is placed in the intake manifold immediately after the carburettor. In automobiles, the throttle valve is operated by foot or accelerator pedal through certain link rods.

https://aermech.com/governingspeed-control-system/

13. The quality method of governing is used in

1. Diesel engines
2. Rocket engines
3. Petrol engines
4. Steam engines

Ans: 1

QUALITY GOVERNING

In quality governing, the air flow rate remain constant but the composition of the mixture is changed by admitting more or less fuel in accordance in variation with load. The variation in the quantity of the fuel admitted is affected by one of the following method:
-changing the angular position of the helical groove of the fuel pump plunger relative to the suction port. This would alter the amount of fuel delivered due to change in effective stroke of pump.

-delaying the closer of suction valve of the pump.

-inserting a control valve to the delivery side of the fuel pump, this by passes a part of fuel back to the reservoir.

The quality governing is mostly used in high speed diesel engine.

HIT AND MISS GOVERNING

In this governing, every charge is of normal strength but an explosion of charge is occasionally omitted when the engine speed has risen above the mean speed. The governor causes the inlet valve to remain close and

puts the fuel pump out of the action in diesel engine. Since no fuel is supplied to the engine, it will perform an idle stroke during which no power will be developed. https://aermech.com/governingspeed-control-system/

14. Dopes are added to the engine fuel
    1. to reduce its detonation tendency
    2. to improve lubrication
    3. to improve lubrication and reduce detonation
    4. none of the three

    Ans: 1

15. Ignition quality of petrol is expressed by
    1. Cetane number
    2. Calorific value
    3. Octane number
    4. None of the three

    Ans: 3

    Ignition quality of petrol is **expressed by octane number and that** of diesel by cetane number.

16. Ignition quality of diesel fuel is expressed by
    1. Cetane number
    2. Calorific value
    3. Octane number
    4. None of the three

    Ans: 1

17. In a four-stroke four cylinder diesel engines, number of carburetors used is
    1. 1
    2. 0
    3. 3
    4. 2

    Ans: 2

18. In a four-stroke four cylinder petrol engines, number of fuel injectors used is
    2. 1
    2. 0
    3. 3
    4. 2

    Ans: 2

19. In a four-stroke four cylinder petrol engines, number of spark plugs used is
    3. 1
    2. 4
    3. 3
    4. 2

    Ans: 2

20. Morse test is used to determine mechanical efficiency of

1. Multi-cylinder engines
2. Two stroke engines
3. Four stroke engines
4. None of these

Ans: 1 (Morse test is used to calculate IP, FP and mechanical efficiency by assuming FP of each cylinder remains constant.)

Morse test is conducted on multicylinder engines to determine the frictional horse power, FP, indicated power and mechanical efficiency of the engine. The power available at the shaft (Brake horse Power) is always less than the indicated horse power (IP) of the engine. These two parameters are related as follows:

IHP = BHP + FHP

where,
IHP = Indicated horse power
BHP = Brake horse power
FHP = Frictional horse Power

21. The domestic refrigerator works on the principle of

1. Vapour absorption refrigeration system
2. Vapor compression refrigeration system
3. Liquid gas refrigeration system
4. Thremo-electric refrigeration system

Ans: 2

22. Cooling of water in an earthen pot is an example of

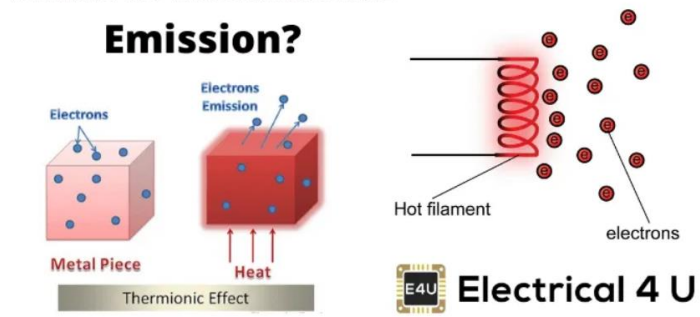
1. Steam jet refrigeration
2. Refrigeration due to evaporation
3. Vapour absorption refrigeration
4. Vapour compression refrigeration

Ans: 2

23. Thermionic emission of electrons is due to

1. electromagnetic field
2. electrostatic field
3. high temperature
4. photo electric effect

Ans: 3



https://www.electrical4u.com/thermionic-emission/

Thermionic emission is the **emission of electrons from a heated metal (cathode)**.As the temperature increases, the surface electrons gain energy. The energy acquired by the surface electrons allows them to move a short distance off the surface thus resulting in emission.

In thermionic emission, the heat supplies some electrons with at least the minimal energy required to overcome the attractive force holding them in the structure of the metal. This minimal energy, called the work function, is characteristic of the emitting material and the state of contamination of its surface.

Britannica, The Editors of Encyclopaedia. "Thermionic emission". ***Encyclopedia Britannica***, 23 Mar. 2009, https://www.britannica.com/science/thermionic-emission. Accessed 15 October 2021.

24. Which class of amplifiers operates with least distortion?

1. Class A 2. Class B 3. Class C 4. Class AB

Ans: 1

Amplifiers are given a classification according to the way in which they are biased and they operate.

Amplifier classes including Class A, Class B, Class AB, Class C.

The class of an amplifier is selected to meet the overall requirements. Different amplifier classes provide different characteristics, enabling the amplifier to perform in a particular way and also with a level of efficiency.

Class A offers least distortion, while Class C offers maximum distortion of the output signal.

HTTPS://WWW.ELECTRONICS-NOTES.COM/ARTICLES/ANALOGUE_CIRCUITS/AMPLIFIER-DESIGN/AMPLIFIER-CLASS-A-B-AB-C-D-F-G-I-S-T.PHP

25. The passage of current in an electrolyte is due to the movement of
1. electrons 2. molecules 3. atoms 4. ions

Ans: 4

26. FM broadcast is done using
1. medium waves 2. short waves
3. VHF and UHF waves 4. micro waves

Ans: 3

Main VHF FM bands

There are a number of VHF FM broadcast bands in use around the globe, and within these channels or frequencies are generally organised to provide the minimum of interference, while using the spectrum in an efficient manner.

- ***87.5 - 108.0 MHz:*** : This is the "standard" VHF FM band - the one that is most widely used around the globe.
- ***76.0 - 90 MHz:*** : This VHF FM band is used in Japan.
- ***65.8 - 74.0 MHz:*** : This VHF FM band is known as the OIRT band. It was used in Eastern Europe, although few countries (Russia, Ukraine, and some other still use. However there is a move to using the more standard 87.5 - 108 MHz band.

https://www.electronics-notes.com/articles/audio-video/broadcast-audio/vhf-fm-frequencies-channels-bands.php

.....

FM radio stations are usually assigned a frequency in the range of **88 to 108 MHz** in contrast to AM radio which is in the range of 0.55 to 1.6 MHz, and this is one reason why AM radio has a longer range; however, FM radio operates better in reception areas that are closed in, such as tunnels and buildings,

AM and FM Radio Frequencies

The Amplitude Modulated (AM radio) carrier frequencies are in the frequency range 535-1605 kHz. Carrier frequencies of 540 to 1600 kHz are assigned at 10 kHz intervals.

The FM radio band is from 88 to 108 MHz between VHF television Channels 6 and 7. The FM stations are assigned center frequencies at 200 kHz separation starting at 88.1 MHz, for a maximum of 100 stations. These FM stations have a 75 kHz maximum deviation from the center frequency, which leaves 25 kHz upper and lower "guard bands" to minimize interaction with the adjacent frequency band.

http://hyperphysics.phy-astr.gsu.edu/hbase/Audio/radio.html

27. The force equal in magnitude and opposite in direction to the resultant is known as the

1. parallel force
2. equilibrant
3. downward force
4. gravitational force

Ans: 2

28. A gas does not have a definite shape or fixed volume, because the molecules are

1. at rest
2. in linear motion
3. in oscillator motion
4. in random motion

Ans: 4

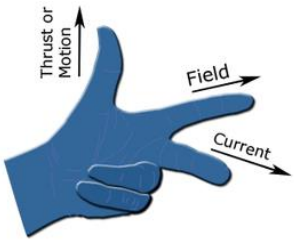
29. Fleming's left hand rule is applied in the …….. to find the direction force acting on the conductors of a

1. motor
2. dynamo
3. transformer
4. Microphone

Ans: 1

FLEMING'S LEFT HAND AND RIGHT HAND RULES

Fleming's left-hand rule is used for **electric motors**, while Fleming's right-hand rule is used for electric generators.
Whenever a current carrying conductor comes under a magnetic field, there will be a force acting on the conductor. The direction of this force can be found using Fleming's Left Hand Rule (also known as 'Flemings left-hand rule for motors').



Douglas Morrison DougM - en.wiki

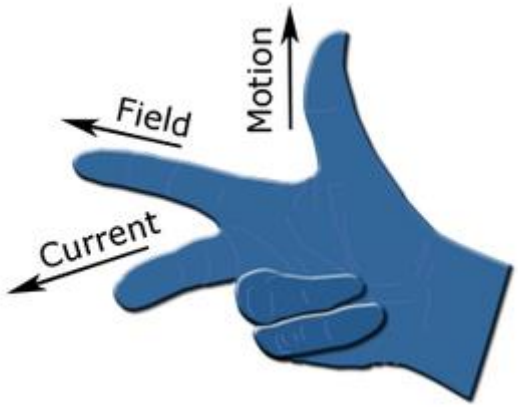
https://en.wikipedia.org/wiki/Fleming's_left-hand_rule_for_motors#/media/File:LeftHandOutline.png

https://en.wikipedia.org/wiki/Fleming's_left-hand_rule_for_motors
https://en.wikipedia.org/wiki/Fleming%27s_right-hand_rule

30. Fleming's right hand rule is applied in the

1. motor
2. Dynamo/generator
4. transformer
4. microphone

Ans: 2



https://en.wikipedia.org/wiki/Fleming%27s_left-hand_rule_for_motors#/media/File:RightHandOutline.png

By Douglas Morrison DougM - en.wiki, CC BY-SA 3.0, https://commons.wikimedia.org/w/index.php?curid=986675

Fleming's right hand rule (for generators) shows the direction of induced current when a conductor attached to a circuit moves in a magnetic field. It can be used to determine the direction of current in a generator's windings.

The right hand is held with the thumb, index finger and middle finger mutually perpendicular to each other (at right angles), as shown in the diagram.

- The thu**m**b is pointed in the direction of the **m**otion of the conductor relative to the magnetic field.
- The **f**irst finger is pointed in the direction of the magnetic **f**ield. By convention, it's the direction from North to South magnetic pole.
- Then the se**c**ond finger represents the direction of the induced or generated **c**urrent within the conductor (from + to −, the terminal with lower electric potential to the terminal with higher electric potential, as in a voltage source)

31. Nuclear fusion is not used for generation of energy because

1. energy released is less than in fission
2. elements used in fusion are rare
3. very high temperature/pressure is required for nuclear fusion to take place
4. hazardous radiations are emitted during fusion

Ans: 3

32. Avogadro number *N* is a

1. Constant at constant temperature
2. Constant at constant pressure
3. Constant at constant volume
4. universal constant

Ans: 4 (Avogadro's number is defined as the number of elementary particles (molecules, atoms, compounds, etc.) per mole of a substance. It is equal **to** **6.022×10^{23} mol^{-1}** and is expressed as the symbol N_A.)

Avogadro's number is formally defined to be the number of carbon-12 atoms in 12 grams of unbound carbon-12 in its rest-energy electronic state. The current state of the art estimates the value of N_A , not based on experiments using carbon-12, but by using x-ray diffraction in crystal silicon lattices in the shape of a sphere or by a watt-balance method. According to the National Institute of Standards and Technology (NIST), the current accepted value for N_A is:

$N_A = (6.0221415 \pm 0.0000010) \times 10^{23}$

https://www.americanscientist.org/article/an-exact-value-for-avogadros-number

33. In electroplating the desired metal to be coated is taken as the

1. electrolyte
2. cathode
3. anode
4. vessel

Ans: 3 (In anode dissolution takes place)

34. In electroplating the desired object to be coated is taken as the

2. electrolyte
2. cathode
3. anode
4. vessel

Ans: 2

35. A jig is a device

1. which holds the job
2. which locates the cutting tool
3. which guides the tool
4. which holds, supports, locates the work piece and guides the cutting tool

Ans: 4 (e.g., jig for drilling, boring, reaming operations)

A jig is a work holding device that holds, supports and locates the workpiece and guides the cutting tool for a specific operation. Jigs are usually fitted with hardened steel bushings

for guiding or other cutting tools. a jig is a type of tool used to control the location and/or motion of another tool. A jig's primary purpose is to provide repeatability, accuracy, and interchangeability in the manufacturing of products. A device that does both functions (holding the work and guiding a tool) is called a jig.

http://www.nitc.ac.in/dept/me/jagadeesha/mev303/CHAPT_INTRODUCTION_TO_JIGS_AND%20FIXTURES.pdf

36. A fixture is a special device
    1. which holds the job during machining, welding, etc,
    2. which locates the cutting tool
    3. which guides the tool
    4. which holds, supports, locates and also guides the cutting tool

Ans: 1

A fixture is a work holding device that holds, supports and locates the workpiece for a specific operation but does not guide the cutting tool. It provides only a reference surface or a device. What makes a fixture unique is that each one is built to fit a particular part or shape. The main purpose of a fixture is to locate and in some cases hold a workpiece during either a machining operation or some other industrial process. A jig differs from a fixture in that a it guides the tool to its correct position in addition to locating and supporting the workpiece. Examples: Vises, chucks.

http://www.nitc.ac.in/dept/me/jagadeesha/mev303/CHAPT_INTRODUCTION_TO_JIGS_AND%20FIXTURES.pdf

37. The main purpose of using a lubricant in machine tools is to
    1. minimize the friction between the moving parts
    2. wet the mating parts for close contact
    3. prevent the machine tool from heating
    4. cool down the mating parts

Ans: 1

Lubrication Meaning

Lubrication is the control of friction and wear by the introduction of a friction-reducing film between moving surfaces in contact. The lubricant used can be a fluid, solid, or plastic substance. **Reducing friction is a key objective of lubrication**, but there are many other benefits of this process. Lubricating films can help prevent corrosion by protecting the surface from water and other corrosive substances. In addition, they play an important role in controlling contamination within systems.

TYPES OF LUBRICATION

There are three different types of lubrication: boundary, mixed and full film. Each

type is different, but they all rely on a lubricant and the additives within the oils to protect against wear.

Full-film lubrication can be broken down into two forms: hydrodynamic and elastohydrodynamic. Hydrodynamic lubrication occurs when two surfaces in sliding motion (relative to each other) are fully separated by a film of fluid.

Elastohydrodynamic lubrication is similar but occurs when the surfaces are in a rolling motion (relative to each other). The film layer in elastohydrodynamic conditions is much thinner than that of hydrodynamic lubrication, and the pressure on the film is greater. It is called elastohydrodynamic because the film elastically deforms the rolling surface to lubricate it.

Boundary lubrication is found where there are frequent starts and stops, and where shock-loading conditions are present. Some oils have extreme-pressure (EP) or anti-wear (AW) additives to help protect surfaces in the event that full films cannot be achieved due to speed, load or other factors.

Mixed lubrication is a cross between boundary and hydrodynamic lubrication. While the bulk of the surfaces are separated by a lubricating layer, the asperities still make contact with each other. This is where the additives again come into play.

https://www.machinerylubrication.com/Read/28766/what-is-lubrication

38. In a shaper, the bull gear wheel is driven

1. by a shaft
2. by pinion
3. by sliding block
4. round head

Ans: 2

In a shaper, the rotary movement of the drive is converted into the reciprocating movement. It is done by the mechanism contained within the column of the machine. The ram holding the tool makes the reciprocating movement. In a standard shaper, metal is cut in the forward cutting stroke, while the return stroke goes idle and no metal is cut during this period. To reduce the full machining time it is important to reduce the time taken by the return stroke. The shaper mechanism should be so designed that it can allow the ram to move at a slower speed during the forward cutting stroke. **This mechanism is known as the quick return mechanism.** These are usually obtained **by following the four types of shaper machine mechanisms:**

1. Crank and slotted link mechanism.
2. Whitworth's quick mechanism.
3. Hydraulic shaper mechanism.
4. Automatic table feed mechanism.

39. For joining thin material to thick material, the rivet used is

1. counter sink head
2. snap head

3. flat head 4. round head

Ans: 1

40. Tab washes are used for

1. preventing vibration 2. locking the nuts
3. self locking 4. fastening structural fabrication work

Ans: 2 (**Locking tab washers-** Locking washers are often bent after assembly to stop rotation and have replaced the use of locking pins and castle or slotted nuts.). Locking devices, particularly cotter pins, spring rings and toothed washers, are used only once.

INTERNAL & EXTERNAL TAB WASHERS | LOCK WASHERS

Tab Washers are designed to securely hold parts in place. There are various types of tab washers that are engineered for different types of applications. The external or internal tabs of the tab lock washer are bent over mating parts to create a physical lock for bolts and nuts. Tab and lock washers are also utilized in environments that feature excessive heating or consistent vibrations.

https://www.williewasher.com/special-shapes/tab-washers.html

41. Mechanical efficiency of a heat engine is

1. the ratio of work output to the fuel energy burnt in the engine
2. ratio of power delivered to power available in the engine
3. ratio of air fuel mixture drawn in the cylinder to the volume of cylinder
4. ratio of power available in the engine to power delivered

Ans: 1

42. What is the element added to intrinsic semiconductor material as impurity to produce *p*-type semiconductor?

1. Antimony 2. Phosphorus 3. Bismuth 4. Indium

Ans: 4

Semiconductor Materials

Silicon (Si) and germanium (Ge) are well-known semiconductor materials. When they are

pure crystals, these substances are close to insulators (intrinsic semiconductors), but doping a small amount of dopant causes the electrical resistance to drop greatly, turning them into conductors. Depending on the kind of dopant, n-type or p-type semiconductor can be made.

A p-type semiconductor is an intrinsic semiconductor doped with trivalent impurities such as boron (B), gallium (Ga), Aluminum (Al) or indium (In) which it creates deficiencies of valance electrons called 'holes'.

An n-type semiconductor is an intrinsic semiconductor doped with pentavalent impurities such as phosphorus (P), arsenic (As), or antimony (Sb) as an impurity which contributes free electrons which greatly increases the conductivity of the intrinsic semiconductor..

https://toshiba.semicon-storage.com/ap-en/semiconductor/knowledge/e-learning/discrete/chap1/chap1-4.html

43. The primary function of a filter capacitor in a power supply is to
    1. minimize the A.C. input variation
    2. suppress the variation of the output voltage
    3. stabilize the D.C. level of the output voltage
    4. remove ripples of AC part from the rectified output

    Ans: 4

44. Copper loss in a transformer that causes power loss is due to
    1. eddy current
    2. magnetic field reversal
    3. resistance of windings
    4. counter EMF

    Ans: 3

45. The motor which requires least maintenance is a
    1. Slip ring induction motor
    2. Squirrel cage induction motor
    3. D.C. series motor
    4. D.C. shunt motor

    Ans: 2

46. Which component among the following reduces noise of exhaust gases in a diesel/petrol engine?
    1. exhaust pipe
    2. muffler
    3. inlet manifold
    4. tail pipe

    Ans: 2

47. A plain ring gauge is used for checking the
    1. external diameter of straight cylindrical parts

2. plain taper bores
3. major diameter of external
4. outside dimensions of rectangular parts

Ans: 1

48. Normally button boring operations on irregular shaped heavy jobs are carried out in
1. three jaw chuck (universal)
2. face plate
3. betweencentres
4. collect chuck

Ans: 4

49. Centre drilling is done before drilling to
1. identify the location of hole
2. locate the hole centre exactly at the centre punch mark
3. locate the hole accurately and lead the chisel edge of drill straight into the job
4. carry out pilot drilling operation

Ans: 2

50. Identify the type of grinding that is done by feeding the wheel into the revolving work, while the table remain stationary
1. cylindrical grinding
2. internal grinding
3. centre less grinding
4. plunge grinding

Ans: 4