

1. Stacking of sawn wood with lot of air space

- (a) Facilitates natural seasoning
- (b) Gives beautiful appearance
- (c) Helps handling
- (d) None of these

Ans: (a)

2. Denser portion of wood is called

- (a) Heart wood
- (b) Sap wood
- (c) Spring wood
- (d) Annular ring

Ans: a

Examination of the end of a log of many species reveals a darker-colored inner **portion, called** the heartwood or duramen, surrounded by a lighter-colored zone **called** the sapwood.

3. Among the Indian timber the species most suitable for furniture making

- (a) Babul
- (b) Mango
- (c) Andaman padauk
- (d) Teak

Ans: (d)

4. Saw doctor in a term referred in the connection with

- (a) Repair and reclamation of band saw
- (b) Attention of doctor in saw mill
- (c) Manufacture of new saws
- (d) None of these

Ans: (a)

5. Precipitation is maximum when

- (a) Temperature is high and air is dry
- (b) Temperature is high and air is humid
- (c) Temperature is low and air is humid
- (d) Temperature is low and air is dry

Ans: (b)

6. Among the following, the better conductor of heat is

- (a) Titanium
- (b) Copper
- (c) Aluminium
- (d) Stainless steel

Ans: (b)

7. Among the following, best conductor of electricity is

- (a) Aluminium (b) Copper (c) Silver (d) Carbon

Ans: (c)

8. Among the following, the best conductor of heat is

- (a) Aluminium (b) Copper (c) Silver (d) Carbon

Ans: (c)

9. Choose the correct answer which specifies the colours of the rainbow

- (a) VIBYGOR (b) VIBGYOR (c) VIBGOYR (d) VIBORGY

Ans: (b)

10. Base/acids and their chemical formulas are given below. Choose the wrong one

- (a) Hydrochloric acid - HCL
(b) Sulphuric acid - H₂SO₄
(c) Nitric Acid - HNO₃
(d) Sodium Hydroxide - Na (OH)₂

Ans: (d). Right answer is NaOH.

11. Elements and their symbols are given below. Choose the incorrect answer

- (a) Gold-Au (b) Silver -Af (c) Mercury - Hg (d) Iron - Fe

Ans: (b) Right answer is Ag

12. Flying (and moving) aeroplane posses

- (a) Kinetic energy + Potential energy
(b) Kinetic energy
(c) Potential energy
(d) None of these

Ans: a.

13. In gear train pinion has 40 teeth and 100 RPM clockwise. If gear wheel has 100 teeth what is its RPM and direction

- (a) 40 clockwise (b) 250 clockwise

(c) 40 Anti clockwise

(d) 250 Anti clockwise

Ans: (c) ($N_1 T_1 = N_2 T_2$ where N is the RPM and T is the number of teeth)

14. Melting point of ice and boiling point of water are

(a) 4°C, 100°C

(b) 0°C, 100°C

(c) 0°C, 32°F

(d) 0°F, 212°F

Ans: (b) Also 32°F, 212°F or 273 K, 373K

15. Choose the wrong combination

(a) Planet nearest to the sun

- Mercury

(b) Most abundant gas in the atmosphere

- Oxygen

(c) Aluminium ore

- Bauxite

(d) Normal body temperature of human beings

- 37° C

Ans: (b). Right answer is nitrogen with 78% and oxygen percentage 21%.

16. Instruments and their uses are given below. Choose the wrong statement

(a) Barometer - Pressure

(b) Thermocouple - Temperature

(c) Tachometer - rpm

(d) Stethoscope - used to listen the sounds made by the heart, lungs or intestines

Ans: (d).

A stethoscope can be used to listen to the sounds made by the heart, lungs or intestines, as well as blood flow in arteries and veins. In combination with a manual sphygmomanometer, it is commonly used when measuring **blood pressure**

17. Surface finish is indicated by

(a) Inverted triangle

(b) Triangle

(c) Circle

(d) Square

Ans: (a)

18. A taper bar has length of 100 cm; diameters on both side 12 cm and 10 cm; the taper is

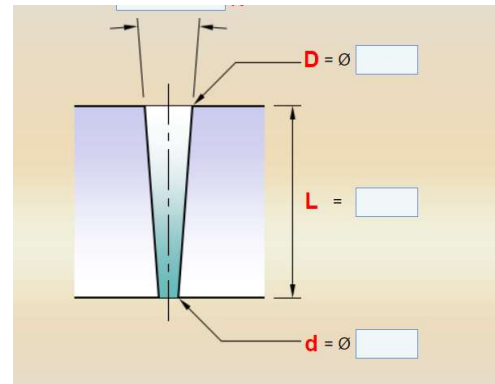
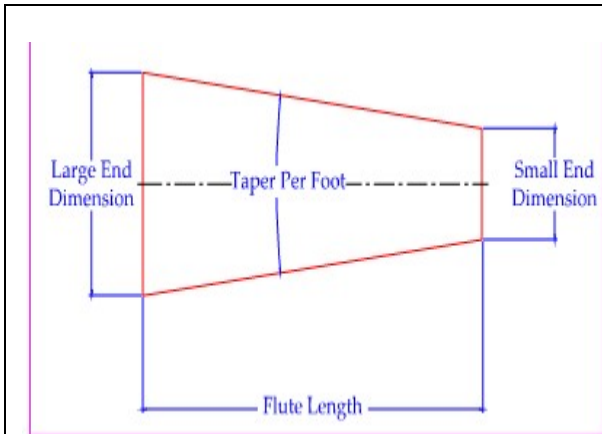
(a) 1 in 100

(b) 20 in 100

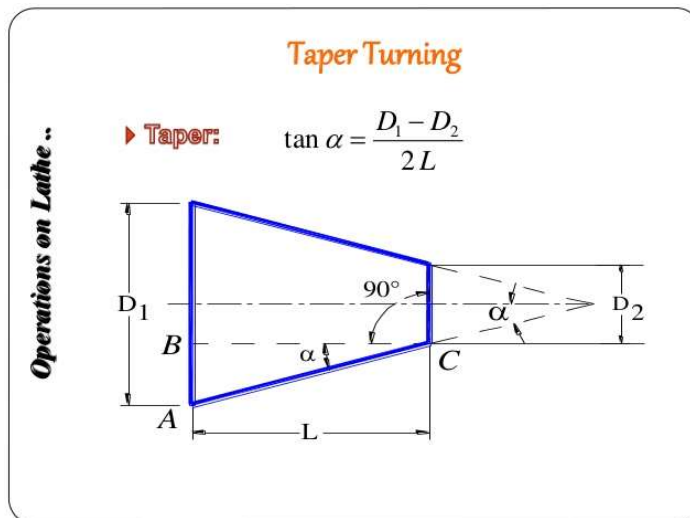
(c) 20 in 120

(d) None of these

Ans: (a) taper = $\frac{D-d}{2}$



<http://www.magafor.com/841/uk.htm>



<https://www.slideshare.net/RajuD1/lathe-machine-kanakarvp>

19. Surface finish can be measured by
- (a) Profilometer
 - (b) Surface gauge
 - (c) By feeling
 - (d) Elcometer

Ans: (a)

Note: Surface texture. In general, the term "surface texture" refers to the primary profile, roughness, waviness and other surface attributes such as the direction of the surface features (also referred to as the "lay" of the surface).

20. In a lathe feeding of bar stocks is through
- (a) Collet
 - (b) Four jaw chuck
 - (c) Three jaw chuck
 - (d) Plate chuck

Ans: (a)

21. Grey Cast iron base in machines has the advantages

- (a) Dampen Vibration (b) Strength
(c) More elegant (d) None of these

Ans: (a)

It has good casting properties, high machinability, good wear resistance as well as good vibration damping. It can withstand greater load and has a good degree of resistance against corrosion. It, however, has low tensile strength and elongation properties. It is used in manufacture of cylinder blocks, pistons, gear boxes, knives, table wheels, pipes, valves, etc.
<https://www.calmet.com/advantages-of-cast-iron-2/>

22. The machining process which can give best surface finish in a hole is

- (a) Honing (b) Reaming (c) Fine boring (d) None of these

Ans: (a)

Honing is an abrasive machining process that produces a precision surface on a metal workpiece by scrubbing an abrasive grinding stone or grinding wheel against it along a controlled path. Honing is primarily used to improve the geometric form of a surface, but can also improve the surface finish.

23. The tool material capable of very high cutting speed

- a) HSS (b) Tungsten carbide (c) Ceramic (d) None of these

Ans: (b)

In general, two performance criteria are used to determine the applicability of a cutter. These are toughness or resistance to fracture and thermal hardness (resistance to heat). Cutting tool materials can be classified into five general categories. The materials are arranged from best toughness characteristics to best thermal hardness:

High speed steel, HSS,

Tungsten carbide,

Cermets,

Ceramics, and

Diamond and cubic boron nitride, CBN.

24. The tool having infinite cutting edges is
- (a) Milling cutter (b) Grinding wheel
(c) Reaming (d) None of these

Ans: (b)

25. When the velocity of a body is doubled its
- (a) Acceleration is doubled
(b) Momentum is doubled
(c) Kinetic energy is doubled
(d) Potential energy is doubled

Ans: (b)

Note: Momentum = mass x velocity = mv

26. When the speed of a body under motion is doubled its kinetic energy becomes
- (a) Double (b) Half (c) 4 times (d) $\frac{1}{4}$ th

Ans: (c). $KE = \frac{1}{2}mV^2$

31. A person climbing a hill bends forward in order to
- (a) Avoid slipping (b) Increase speed
(c) Reduce fatigue (d) Increase stability

Ans: (d)

32. An object weighs most in
- (a) Air (b) Water (c) Oxygen (d) Vacuum

Ans: (d) (because there is no air resistance)

33. The best conductor of heat among liquids is
- (a) Water (b) Mercury (c) Ether (d) Alcohol

Ans: (b)

34. Perspiration is maximum when
- (a) Temperature is high and air is dry
(b) Temperature is high and air is humid

- (c) Temperature is low and air is humid
- (d) Temperature is low and air is dry

Ans: (b)

Perspiration, also known as **sweating**, is the production of fluids secreted by the sweat glands in the skin of mammals. In humans, sweating is primarily a means of thermoregulation.

When the ambient temperature is above body temperature, then radiation, conduction and convection all modes of heat transfer takes place into the body rather than out. Since there must be a net outward heat transfer, the only mechanisms left under those conditions are the evaporation of perspiration from the skin and the evaporative cooling from exhaled moisture.

<http://hyperphysics.phy-astr.gsu.edu/hbase/thermo/sweat.html>

35. Ultimate source of energy for the universe

- (a) Sun
- (b) Ocean
- (c) Space
- (d) Atmosphere

Ans: (a)

36. Primitive man first learnt

- (a) To make fire
- (b) To tame animals
- (c) To make a wheel
- (d) To grow grain

Ans: (a)

39. Non violence according to Gandhi was

- (a) A means to achieve an end
- (b) An end in itself
- (c) A means to embarrass an opponent
- (d) A way out of political impasse

Ans: (a) Tapasya (Self-Suffering)

40. What is the unit of measurement of distance of stars?

- (a) Light year
- (b) Fathom
- (c) Nautical mile
- (d) Kilometer

Ans: (a)

Parsecs: Many astronomers prefer to use **parsecs** (abbreviated **pc**) to measure distance to stars. A **parsec** is the distance at which 1 AU subtends an angle of 1 arcsec.
1 parsec = 3.086×10^{13} km. Approximately 3.26 light years.

Definition-A parsec is the distance from the sun to an astronomical object which has a parallax angle of one arcsecond (1/3600 of a degree).

41. Nautical miles is used in the travel of

- (a) Road transport and Railways (b) Ships/navigation and Aeroplanes/Flights
(c) Railways and Ships (d) None

Ans: (b)

42. What is meant by the term Midnight Sun?

- (a) Twilight (b) Very bright moon
(c) Rising sun (d) Sun shining in the polar circles for long time

Ans: d.

Note: The term "midnight sun" refers to the consecutive 24-hour periods of sunlight experienced in the north of the Arctic Circle and south of the Antarctic Circle. The **midnight sun** is a natural phenomenon that occurs in the summer months in places north of the Arctic Circle or south of the Antarctic Circle, when the sun remains visible at the local midnight.

43. What is measured on the Richter scale?

- (a) Wind velocity (b) Intensity of Earth quakes
(c) Solar Radiation (d) Geothermal Energy

Ans: (b)

44. The Indian railways is a

- (a) Departmental enterprise
(b) Non Departmental enterprise
(c) Joint sector enterprise
(d) Central government enterprise under Ministry of Railways.

Ans: (d)

45. A shaft of 25mm dia. rotates at 400 rpm during turning operation; what is the cutting speed in meters per minute

- (a) 10 (b) 15 (c) 31.4 (d) None of these

Ans: (c).

Cutting speed $V_c = \frac{\pi DN}{1000}$ m/min, where D is the shaft dia. in mm and N is rpm.

46. Feed during turning in a lathe is given in terms of

- (a) mm (b) mm per revolution (c) RPM (d) None of these

Ans: (b)

47. The purpose of cutting fluid/coolant is not

- (a) To cool the cutting edge.
(b) Improves finish
(c) Improves life of tool
(d) To remove rust in machine

Ans: (a)

47. What facilitates smaller discontinuous chips?

- (a) Tool shape (b) Provision of a chip breaker in tool
(c) Operator (d) None of these

Ans: (a)

48. The facts about shaper and planer is not

- (a) In shaper job remains stationary
(b) In planer job reciprocates
(c) Planer is suited for big/heavy jobs
(d) Shaper can do any shape

Ans: (d)

49. The machines not having quick return mechanism is

- (a) Shaper (b) Grinding (c) Milling (d) Broaching

Ans: b, (c) and d.

50. The machines having quick return mechanism is

- (a) Shaper (b) Planer (c) Slotting (d) All

Ans: (d)

Note: A quick return mechanism is an system to produce a reciprocating effect such that time taken by system in return stroke is less time taken by it in the forward stroke. In quick return mechanism, a circular motion is converted into reciprocating motion just like crank and lever mechanism but it has return stroke time is different from forward stroke time. This mechanism is used in many machines. Some of them are shaper machines, slotter machines, screw press, mechanical , etc. With the help of quick return mechanism, the time needed to cutting is minimized.

Types of Quick Return Mechanism

1 Hydraulic Drive

Hydraulic drive mechanism is one of the mechanism used in shaper machine. In this mechanism, the ram is moved forward and backward by a piston moving in a cylinder placed under the ram.

2. Whitworth Quick Return mechanism

This mechanism changes the rotary motion to oscillatory motion like the crank and lever mechanism. The difference between the crank and lever mechanism and Whitworth mechanism is that in whitworth mechanism the return stroke is faster than the forward stroke while in the crank and lever mechanism the forward stroke is of same speed as that of return stroke.

3) Crank and Slotted Link Mechanism

In crank and slotted link mechanism, the power is transmitted to the bull gear by a pinion which recieves its power from an individual motor. In a two gear system, the smaller gear is called pinion and the larger gear is called bull gear.

<http://www.mechanicalwalkins.com/quick-return-mechanism-types/>