

# Design Engineer Interview Questions And Answers Guide.



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## Design Engineer Job Interview Preparation Guide.

### Question # 1

The sleeve or muff coupling is designed as a

- A. dun cylinder
- B. thick cylinder
- C. solid shaft
- D. hollow shaft

**Answer:-**

D. hollow shaft

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### Question # 2

When bevel gears connect two shafts whose axes intersect at an angle greater than a right angle and one of the bevel gears has a pitch angle of 90., then they are known as

- A. angular bevel gears
- B. crown bevel gears
- C. internal bevel gears
- D. mitre gears

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 3

Screws used for power transmission should have

- A. Low efficiency
- B. high efficiency
- C. very fine threads
- D. strong teeth

**Answer:-**

Option B

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### Question # 4

The number of rivets in shear shall be equal to the number of rivets in crushing.

- A. Correct B. Incorrect

**Answer:-**

Option A

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### Question # 5

A sliding bearing in which the working surfaces are completely separated from each other by lubricant is called zero film bearing.

- A. True B. False

**Answer:-**

Option B

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### Question # 6

Which of the following statement is wrong ?

- A. The power transmitted by V-belts is less than flat belts for the same coefficient of friction, arc of contact and allowable tension in the belts



- B. The V-belt drive is used with large centre distance
- C. The V-belt may be operated in either direction with tight side of the belt at the top or bottom
- D. The ratio of driving tensions in V-belt drive is more than flat belt drives

**Answer:-**

Option B

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### Question # 7

Slenderness ratio is the ratio of

- A. maximum size of column to minimum size of column
- B. width of column to depth of column
- C. effective length of column to least radius of gyration of the column
- D. effective length of column to width of column

**Answer:-**

Option C

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### Question # 8

In order to avoid tearing of the plate at an edge, the distance from the centre line of the rivet hole to the nearest edge of the plate should be equal to (where  $d$  = Diameter of rivet hole)

- A.  $d$
- B.  $1.5 d$
- C.  $2 d$
- D.  $2.5 d$

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 9

According to Guest's theory, the failure occurs at a point in a member when the maximum shear stress in a bi-axial stress system reaches the shear stress at elastic limit in simple tension test.

- A. True
- B. False

**Answer:-**

Option A

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### Question # 10

In a flange coupling, the thickness of flanges is taken as one-half the diameter of shaft.

- A. Agree
- B. Disagree

**Answer:-**

Option A

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### Question # 11

The rolling contact bearings as compared to sliding contact bearings have

- A. small overall dimensions
- B. accuracy of shaft alignment
- C. low starting and low running friction except at very high speeds
- D. all of the above

**Answer:-**

Option D

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### Question # 12

The endurance limit for a mirror polished material will be \_\_\_\_\_ as compared to unpolished material.

- A. same
- B. less
- C. more

**Answer:-**

Option C

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### Question # 13

The maximum normal stress theory is used for



- A. brittle materials
- B. ductile materials
- C. plastic materials
- D. non-ferrous materials

**Answer:-**

Option A

[Read More Answers.](#)

### **Question # 14**

The bearings of heavy series have capacity \_\_\_\_\_ over the medium series.

- A. 10 to 20%
- B. 20 to 30%
- C. 30 to 40%
- D. 40 to 50%

**Answer:-**

Option B

[Read More Answers.](#)

### **Question # 15**

Two shafts A and B under pure torsion are of identical length and identical weight and are made of the same material. The shaft A is solid and the shaft B is hollow.

We can say that

- A. shaft B is better than shaft A
- B. shaft A is better than shaft B
- C. both the shafts are equally good

**Answer:-**

Option A

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### **Question # 16**

Which of the following statement is correct for gears?

- A. The addendum is less than dedendum
- B. The pitch circle diameter is equal to the product of module and number of teeth
- C. The pitch circle is always greater than the base circle
- D. all of the above

**Answer:-**

Option D

[Read More Answers.](#)

### **Question # 17**

The constant factor in case of R10 series of preferred numbers is

- A. 1.06
- B. 1.12
- C. 1.26
- D. 1.58

**Answer:-**

Option C

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### **Question # 18**

In order to obtain the bolts of uniform strength, an axial hole is drilled through the head as far as the threaded portion such that the area of shank becomes equal to the root area of the thread.

- A. True
- B. False

**Answer:-**

Option A

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### **Question # 19**

The value of stress concentration factor depends upon

- A. material of the part
- B. geometry of the part
- C. material and geometry of the part
- D. none of these

**Answer:-**

Option C

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### Question # 20

The ball bearings are provided with a cage

- A. to reduce friction
- B. to facilitate slipping of balls
- C. to prevent the lubricant from flowing out
- D. to maintain the balls at a fixed distance apart

**Answer:-**

Option D

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### Question # 21

The velocity of sliding \_\_\_\_\_ the distance of the point of contact from the pitch point.

- A. is directly proportional to
- B. is inversely proportional to
- C. is equal to  $\cos \phi$  multiplied by
- D. does not depend upon

**Answer:-**

Option A

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### Question # 22

A locking device in which the bottom cylindrical portion is recessed to receive the tip of the locking set screw, is called

- A. castle nut
- B. jam nut
- C. ring nut
- D. sawn nut

**Answer:-**

Option C

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### Question # 23

The application of third type levers is found in

- A. handle of a hand pump
- B. hand wheel of a punching press
- C. lever of a loaded safety valve
- D. a pair of tongs

**Answer:-**

Option D

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### Question # 24

A crankshaft is a \_\_\_\_\_ shaft.

- A. transmission
- B. machine

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 25

According to Indian standard specifications, 100 H6/g5 means that the

- A. actual size is 100 mm
- B. basic size is 100 mm
- C. difference between the actual size and basic size is 100 mm
- D. none of the above

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 26

When a bolt is subjected to shock loading, the resilience of the bolt should be considered in order to prevent breakage at the

- A. head
- B. shank
- C. thread
- D. middle

**Answer:-**

Option C

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### Question # 27

Stress concentration is caused due to

- A. variations in load acting on a member
- B. variations in properties of materials in a member
- C. abrupt change of cross-section
- D. all of these

**Answer:-**

Option C

[Read More Answers.](#)

### Question # 28

In leaf springs, the longest leaf is known as

- A. lower leaf
- B. master leaf
- C. upper leaf
- D. none of these

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 29

Surface endurance limit of gear material is dependent upon its

- A. elastic strength
- B. yield strength
- C. brinell hardness number
- D. toughness

**Answer:-**

Option C

[Read More Answers.](#)

### Question # 30

The toughness of a material \_\_\_\_\_ when it is heated.

- A. increases
- B. decreases
- C. does not change

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 31

In a flange coupling, the flanges are coupled together by means of

- A. bolts and nuts
- B. studs
- C. headless taper bolts
- D. none of these

**Answer:-**

Option A

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### Question # 32

In radial cams, the follower moves

- A. in a direction perpendicular to the cam axis
- B. in a direction parallel to the cam axis
- C. in any direction irrespective of cam axis
- D. along the cam axis

**Answer:-**

Option A

[Read More Answers.](#)

### Question # 33

In a hydrodynamic lubricated bearing

- A. there is a thick film of lubricant between the journal and the bearing
- B. there is a thin film of lubricant between the journal and the bearing
- C. there is no lubricant between the journal and the bearing
- D. the lubricant is forced between the journal and the bearing, by external pressure

**Answer:-**

Option A



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### Question # 34

The taper on cotter varies from

- A. 1 in 15 to 1 in 10
- B. 1 in 24 to 1 in 20
- C. 1 in 32 to 1 in 24
- D. 1 in 48 to 1 in 24

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 35

When a load  $W$  is suddenly applied to a bar of weight  $W_1$ , the stress induced in the bar will increase with the increase in weight  $W_1$ .

- A. Correct
- B. Incorrect

**Answer:-**

Option B

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### Question # 36

Which of the following statement is correct?

- A. The toughness of a material increases when it is heated.
- B. The shear stress in a beam varies from zero at the neutral surface and maximum at the outer fibres.
- C. The stress concentration in static loading is more serious in brittle materials and less serious in ductile materials.
- D. The stress concentration in static loading is more serious in ductile materials and less serious in brittle materials.

**Answer:-**

Option C

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### Question # 37

The rolling contact bearings are known as

- A. thick lubricated bearings
- B. plastic bearings
- C. thin lubricated bearings
- D. antifriction bearings

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 38

Which of the following material has the maximum ductility?

- A. Mild steel
- B. Copper
- C. Zinc
- D. Aluminium

**Answer:-**

Option A

[Read More Answers.](#)

### Question # 39

For unequal width of butt straps, the thickness of butt straps are

- A. 0.75 t for wide strap on the inside and 0.625 t for narrow strap on the outside
- B. 0.75 t for narrow strap on the inside and 0.625 t for wide strap on the outside
- C. 0.75 t for both the straps on the inside and outside
- D. 0.625 t for both the straps on the inside and outside

**Answer:-**

Option A

[Read More Answers.](#)

### Question # 40

The number of slots in a 25 mm castle nut is

- A. 2
- B. 4
- C. 6
- D. 8

**Answer:-**



Option C

[Read More Answers.](#)

### Question # 41

An open belt drive is used when

- A. shafts are arranged parallel and rotate in the opposite directions
- B. shafts are arranged parallel and rotate in the same directions
- C. shafts are arranged at right angles and rotate in one definite direction
- D. driven shaft is to be started or stopped whenever desired without interfering with the driving shaft

**Answer:-**

Option B

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### Question # 42

The size of a gear is usually specified by

- A. pressure angle
- B. pitch circle diameter
- C. circular pitch
- D. diametral pitch

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 43

When two non-intersecting and non-coplaner shafts are connected by gears, the arrangement is known as

- A. spur gearing
- B. helical gearing
- C. bevel gearing
- D. spiral gearing

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 44

Screws jacks have multiple threads.

- A. Agree
- B. Disagree

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 45

In a gear, having involute teeth, the normal to the involute is a tangent to the

- A. pitch circle
- B. base circle
- C. addendum circle
- D. dedendum circle

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 46

The square threads are not so strong as V-threads but they offer less frictional resistance to motion than Whitworth threads.

- A. Correct
- B. Incorrect

**Answer:-**

Option A

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### Question # 47

In second type of levers,

- A. load is in between the fulcrum and effort
- B. effort is in between the fulcrum and load
- C. fulcrum is in between the load and effort
- D. none of these

**Answer:-**





Option A

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### Question # 48

The backlash for spur gears depends upon

- A. module
- B. pitch line velocity
- C. tooth profile
- D. both (a) and (b)

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 49

A sliding bearing which operates without any lubricant present, is called

- A. zero film bearing
- B. boundary lubricated bearing
- C. hydrodynamic lubricated bearing
- D. hydrostatic lubricated bearing

**Answer:-**

Option A

[Read More Answers.](#)

### Question # 50

When screw threads are to be used in a situation where power is being transmitted in one direction only, then the screw threads suitable for this will be

- A. square threads
- B. acme threads
- C. knuckle threads
- D. buttress threads

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 51

A screw is said to be over hauling screw, if its efficiency is

- A. less than 50%
- B. more than 50%
- C. equal to 50%
- D. none of these

**Answer:-**

Option B

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### Question # 52

The load cup of a screw jack is made separate from the head of the spindle to

- A. enhance the load carrying capacity of the jack
- B. reduce the effort needed for lifting the working load
- C. prevent the rotation of load being lifted
- D. reduce the value of frictional torque

**Answer:-**

Option C

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### Question # 53

The difference between the tooth space and the tooth thickness as measured on the pitch circle, is called

- A. working depth
- B. clearance
- C. face width
- D. backlash

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 54

The radial distance of a tooth from the pitch circle to the top of the tooth is called

- A. dedendum
- B. addendum



- C. clearance
- D. working depth

**Answer:-**

Option B

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### **Question # 55**

A steel containing more than 0.8% carbon is known as eutectoid steel.

- A. Yes
- B. No

**Answer:-**

Option B

[Read More Answers.](#)

### **Question # 56**

A transmission shaft includes

- A. counter shaft
- B. line shaft
- C. over head shaft
- D. all of these

**Answer:-**

Option D

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### **Question # 57**

Soderberg relation is based on \_\_\_\_\_ of the material whereas all other failure relation for dynamic loading are based on ultimate strength of the material.

- A. elastic strength
- B. yield strength
- C. shear strength

**Answer:-**

Option B

[Read More Answers.](#)

### **Question # 58**

A locking device extensively used in marine type connecting rod ends is a

- A. jam nut
- B. castle nut
- C. sawn nut
- D. ring nut

**Answer:-**

Option D

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### **Question # 59**

Circumferential joint in boilers is used to get the required length of a boiler.

- A. True
- B. False

**Answer:-**

Option A

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### **Question # 60**

When the bearing is subjected to large fluctuations of load and heavy impacts, the bearing characteristic number should be \_\_\_\_\_ the bearing modulus.

- A. 5 times
- B. 10 times
- C. 15 times
- D. 20 times

**Answer:-**

Option C

[Read More Answers.](#)

### **Question # 61**

In an ordinary bolt, the effect of the impulsive loads applied axially is concentrated on the cross-sectional area at the root of the threads.

- A. Yes
- B. No

**Answer:-**



Option A

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### Question # 62

A column is known as a long column if the slenderness ratio is

- A. 40
- B. 50
- C. 70
- D. 100

**Answer:-**

Option D

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### Question # 63

The material used for brake lining should have \_\_\_\_\_ coefficient of friction.

- A. low
- B. high

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 64

In unilateral system of tolerance, the tolerance is allowed on

- A. one side of the actual size
- B. one side of the nominal size
- C. both sides of the actual size
- D. both sides of the nominal size

**Answer:-**

Option B

[Read More Answers.](#)

### Question # 65

When a nut is tightened by placing a washer below it, the bolt will be subjected to

- A. tensile stress
- B. compressive stress
- C. shear stress
- D. none of these

**Answer:-**

Option A

[Read More Answers.](#)

### Question # 66

The pipe joint mostly used for pipes carrying water at low pressures is

- A. socket joint
- B. nipple joint
- C. union joint
- D. spigot and socket joint

**Answer:-**

Option A

[Read More Answers.](#)

### Question # 67

The resistance to fatigue of a material is measured by

- A. elastic limit
- B. Young's modulus
- C. ultimate tensile strength
- D. endurance limit

**Answer:-**

Option D

[Read More Answers.](#)

### Question # 68

Which of the following screw thread is used for power transmission in one direction only.

- A. Acme threads
- B. Square threads
- C. Buttress threads
- D. Multiple threads



**Answer:-**

Option C

[Read More Answers.](#)

**Question # 69**

The sleeve or muff coupling is designated as a \_\_\_\_\_?

**Answer:-**

No Answer is Posted For this Question

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