
Q800 - Junior Engineer, Part I

1. Which pipe listed has the largest outside diameter?

- A 3/4" pipe with a standard wall thickness.
- A 3/4" pipe with an extra strong wall thickness.
- A 3/4" pipe with a double extra strong wall thickness.
- **All have the same outside diameter.**

Note:
The outside diameter of a pipe is determined by its nominal size, not its wall thickness. Therefore, all 3/4" pipes, regardless of wall thickness (standard, extra strong, or double extra strong), have the same outside diameter.

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2. Which of the listed pipe sizes is not commonly used?

- 3/8 inch
- 1/2 inch
- **5/8 inch**
- 3/4 inch

Note:
5/8 inch is not a standard nominal pipe size, while 3/8, 1/2, and 3/4 inch are commonly used.

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3. Piping cross-sections over 12 inches in diameter are sized by the _____.

- inside diameter
- wall thickness
- **outside diameter**
- threaded diameter

Note:
Piping cross-sections exceeding 12 inches are sized by their outside diameter. This designation is based on the outside measurement, not the inside diameter, wall thickness, or threaded diameter.

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4. The designation 'schedule 80' refers to _____.

- weight of steel plate
- tubing bursting strength
- **piping wall thickness**
- tensile strength of bolts

Note:
Schedule 80 designates piping wall thickness; this designation defines a standard series of wall thicknesses for pipe at a given nominal pipe size.

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5. Allowances may be made for the expansion and contraction in piping by the use of expansion joints or _____.

- retractable flanges
- unions
- **bends or loops in the line**
- union bulkhead fittings

Note:
Bends or loops in the line provide flexibility to accommodate thermal expansion and contraction, preventing stress and potential failure. Expansion joints offer a similar function, but bends or loops achieve this through a flexible pipe configuration, unlike unions, retractable flanges, or bulkhead fittings which serve different purposes.

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6. When cutting external threads on a steel pipe with a die, you should _____.

- tap the die with a hammer to break up the chips
- **continue turning until the end of the pipe has gone through the die and is flush with the die face**
- never use a lubricant
- start the die at a slight angle with the work to create tapered threads

Note:
To ensure full thread depth and correct form when cutting external threads on a steel pipe with a die, continue turning the die until the end of the pipe is flush with the die face.

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7. Which of the following descriptions should be included when identifying the length for pipe nipples?

- Fully threaded, half threaded, long, and short
- **Close, short, long, and tank**
- Standard, extra-strong, double extra-strong, and schedule 80
- Cast, wrought, stainless, and brass

Note:
Pipe nipple length is identified using terms like close, short, long, and tank, which describe the nipple's configuration and length, differentiating it from descriptions of material, thread coverage, or wall thickness.

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8. Fittings used to close the ends of pipe are called "pipe _____".

- tees
- closures
- **caps**
- ells

Note:
Pipe caps are fittings specifically designed to close the ends of pipes; other options are used for different purposes, such as connecting multiple pipes (tees), changing direction (ells), or a general, non-technical description (closures).

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9. A pipe coupling is a fitting having _____.

- **inside threads on both ends**
- a left-hand twist
- outside threads on one end and inside threads on one end
- outside threads on both ends

Note:
A pipe coupling joins two pipes with male threads and has inside threads on both ends.

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10. Before making up a flanged joint, you should _____.

- cut grooves in the flange face with a chisel
- **be certain that the flanges line up squarely**
- heat the pipeline to expand the bolt holes
- have a second spare gasket on hand

Note:
Flange alignment is critical for a tight, even gasket seal and to prevent joint stress. Ensure flanges line up squarely before assembly to avoid uneven compression, leaks, or damage.
