

2010

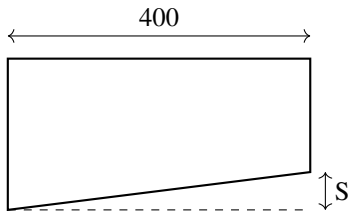
ME : Mechanical Engineering

EE24BTECH11037 - Manogna Kundarapu

- 1) The maximum magnitude of bending stress in (MPa) is given by
- 60.0
 - 67.5
 - 200.0
 - 225.0

Statement for Linked Answer Questions 54 and 55:

In shear cutting operation, a sheet of $5mm$ thickness is cut along a length of $200mm$. The cutting blade is $400mm$ long (*see figure*) and zero-share ($S = 0$) is provided on the edge. The ultimate shear strength of the sheet is $100MPa$ and penetration to thickness ratio is 0.2 . Neglect friction.



- 2) Assuming force vs displacement curve to be rectangular, the work done (inJ) is
- 100
 - 200
 - 250
 - 300
- 3) A shear of $20mm$ ($S = 20mm$) is now provided on the blade. Assuming force vs displacement curve to be trapezoidal, the maximum force ($in kN$) exerted is
- 5
 - 10
 - 20
 - 40

General Aptitude (GA) Questions

Q.56-Q.60 carry one mark each.

- 4) 25 persons are in a room. 15 of them play hockey, 17 of them play football and 10 of them play both hockey and football. Then the number of persons playing neither hockey nor football is:

- a) 2
- b) 17
- c) 13
- d) 3

5) Choose the most appropriate word from the options given below to complete the following sentence:

If we manage to _____ our natural resources, we would leave a better planet for our children.

- a) uphold
- b) restrain
- c) cherish
- d) conserve

6) The question below consists of a pair of related words followed by four pairs of words. Select the pair that best expresses the relation in the original pair.

Unemployed : Worker

- a) fallow : land
- b) unaware : sleeper
- c) wit : jester
- d) renovated : house

7) Which of the following options is the closest in meaning to the word given below:

Circuitous

- a) cyclic
- b) indirect
- c) confusing
- d) crooked

8) Choose the most appropriate word from the options given below to complete the following sentence:

His rather casual remarks on politics _____ his lack of seriousness about the subject.

- a) masked
- b) belied
- c) betrayed
- d) suppressed

Q.61 - Q.65 carry two marks each.

9) Hari (H), Gita(G), Irfan(I) and Saira(S) are siblings (i.e. brothers and sisters). All were born on 1st January. The age difference between any two successive siblings (that is born one after another) is less than 3 years. Given the following facts:

- i. Hari's age + Gita's age > Irfan's age + Saira's age.
- ii. The age difference between Gita and Saira is 1 year. However, Gita is not the oldest and Saira is not the youngest.
- iii. There are no twins.

In what order were they born (oldest first)?

- a) HSIG
 - b) SGHI
 - c) IGSH
 - d) IHSG
- 10) 5 skilled workers can build a wall in 20 days; 8 semi-skilled workers can build a wall in 25 days; 10 unskilled workers can build a wall in 30 days. If a team has 2 skilled, 6 semi-skilled and 5 unskilled workers, how long it will take to build the wall?
- a) 20 days
 - b) 18 days
 - c) 16 days
 - d) 15 days
- 11) **Modern warfare has changed from large scale clashes of armies to suppression of civilian populations. Chemical agents that do their work silently appear to be suited to such warfare; and regretfully, there exists people in military establishments who think that chemical agents are useful tools for their cause.**
- Which of the following statements best sums up the meaning of the above passage:
- a) Modern warfare has resulted in civil strife.
 - b) Chemical agents are useful in modern warfare.
 - c) Use of chemical agents in warfare would be undesirable.
 - d) People in military establishments like to use chemical agents in war.
- 12) Given digits 2, 2, 3, 3, 3, 4, 4, 4, 4 how many distinct 4 digit numbers greater than 300 can be formed?
- a) 50
 - b) 51
 - c) 52
 - d) 54
- 13) If $137 + 276 = 435$ how much is $731 + 672$?
- a) 534
 - b) 1403
 - c) 1623
 - d) 1513