

2010

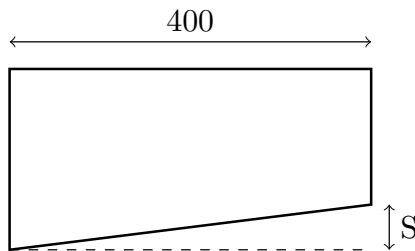
ME : Mechanical Engineering

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:
- 2
 - 17
 - 13
 - 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.
- uphold
 - restrain
 - cherish
 - 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
- fallow : land
 - unaware : sleeper
 - wit : jester
 - renovated : house
- 7) Which of the following options is the closest in meaning to the word given below:
Circuitous
- cyclic
 - indirect
 - confusing
 - 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.
- masked
 - belied
 - betrayed
 - 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) IGSB
 - 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