

2010 Aerospace Engineering

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AI24BTECH11003 - Badde Vijaya Sreyas

53) What is the specific thrust produced by this engine under the given conditions?

- a) $586 \frac{Ns}{kg}$ b) $745 \frac{Ns}{kg}$ c) $686 \frac{Ns}{kg}$ d) $500 \frac{Ns}{kg}$

Statement for Linked Answer Questions 54 and 55:

An aircraft is in straight and level flight at a constant speed v . It is disturbed by a symmetrical vertical gust, resulting in a phugoid oscillation of time period T .

54) Assuming that g is the acceleration due to gravity, T is given approximately by:

- a) $\frac{v}{\pi g}$ b) $\frac{\pi v}{g}$ c) $\frac{v}{\sqrt{2}\pi g}$ d) $\frac{\sqrt{2}\pi v}{g}$

55) If $v = 200 \frac{m}{s}$, then the wavelength of the phugoid oscillations, assuming $g = 9.81 \frac{m}{s^2}$ is, approximately:

- a) $1.28 \times 10^4 m$ b) $1.30 \times 10^3 m$ c) $1.81 \times 10^4 m$ d) 918m

56) Which of the following options is the closest in meaning to the word below:
Circuitous

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

57) 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

58) 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

59) 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
- 60) 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
- 61) 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 exist people in military establishments who think chemical agents are useful tools to their cause.
Which of the following statements best sums up the meaning of the above passage?
- a) Modern warfare has resulted in civilian 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.
- 62) If $137 + 276 = 435$, how much is $731 + 672$?
- a) 534 b) 1403 c) 1623 d) 1513
- 63) 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 will it take to build the wall?
- a) 20 days b) 18 days c) 16 days d) 15 days
- 64) Given digits 2, 2, 3, 3, 3, 4, 4, 4, 4, how many distinct 4 digit numbers greater than 3000 can be formed?
- a) 50 b) 51 c) 52 d) 54
- 65) 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 after one another) is less than 3 years. Given the following facts:
- Hari's age + Gita's age > Irfan's age + Saira's age
 - The age difference between Gita and Saira is 1 year. However, Gita is not the oldest, and Saira is not the youngest.
 - There are no twins.
- In what order were they born (oldest first)?
- a) HSIH b) SGHI c) IGSB d) IHSG