

GATE Questions 10

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EE24BTECH11012 - Bhavanisankar G S

- 1) For the given assembly : 25 H7/g8, match Group A with Group B

TABLE I: Table 1

Group A	Group B
H	Shaft Type
IT8	Hole type
IT7	Hole Tolerance Grade
g	Shaft Tolerance Grade

- a) P-I, Q-III, R-IV, S-II
b) P-I, Q-IV, R-III, S-II
c) P-II, Q-III, R-IV, S-I
d) P-II, Q-IV, R-III, S-I
- 2) If the Taylor's tool life exponent n is 0.2, and the tool changing time is 1.5 min, then the tool life (*in min*) for maximum production rate is
- 3) An aluminium alloy ($\text{density } 2600 \text{ kg/m}^3$) casting is to be produced. A cylindrical hole of 100 mm diameter and 100 mm length is made in the casting using sand core ($\text{density } 1600 \text{ kg/m}^3$). The net buoyancy force (*in Newton*) acting on the core is
- 4) Choose the most appropriate word from the options below to complete the following sentence.
Communication and interpersonal skills are (blank) important in their own ways.

- a) each b) both c) all d) either

- 5) Which of the options given below best completes the following sentence ?
She will feel much better if she (blank) .

- a) will get some rest c) will be getting some rest
b) gets some rest d) is getting some rest

- 6) Choose the most appropriate pair of words from the options given below to complete the following sentence.
She could not (blank) the thought of (blank) the election to her bitter rival.

- a) bear, losing c) bear, losing
b) bare, losing d) bare, losing

- 7) A regular die has six sides with numbers 1 to 6 marked on its sides. If a very large number of throws shown the following frequencies of occurrence

$$1 \rightarrow 0.167; 2 \rightarrow 0.167; 3 \rightarrow 0.152$$

$$4 \rightarrow 0.166; 5 \rightarrow 0.168; 6 \rightarrow 0.180$$

We call this die as

- a) irregular b) biased c) Gaussian d) insufficient

- 8) Fill in the missing number in the series

2 3 6 15 (blank) 157.5 630

- 9) Find the odd one in the following group

Q,W,Z,B B,H,K,M

W,C,G,J M,S,V,X

- a) Q,W,Z,B b) B,H,K,M c) W,C,G,J d) M,S,V,X

- 10) Light of four colors (red, blue, green, yellow) are hung on a ladder. On every step of the ladder, there are two lights. If one of the lights is red, the other light on that step will always be blue. If one of the lights on a step is green, the other light on that step will always be yellow. Which of the following statements is not necessarily correct ?

- a) The number of red lights is equal to the number of blue lights.
b) The number of green lights is equal to the number of yellow lights.
c) The sum of the red and green lights is equal to the sum of the yellow and blue lights.
d) The sum of the red and blue lights is equal to the sum of the green and yellow lights.

- 11) The sum of eight consecutive odd numbers is 656. The average of four consecutive even numbers is 87. What is the sum of the smallest odd number and second largest even number ?

- 12) The total exports and revenues from the exports of a country are given in the two charts shown below. The pie chart for exports shows the quantity of each item exported as a percentage of the total quantity of exports. The pie chart for the revenues shows the percentage of the total revenue generated through export of each item. The total quantity of exports of all the items is 500 thousand tonnes and the tonnes and the total revenues are 250 crore rupees. Which item among the following has generated the maximum revenue per kg ?

- a) Item 2 b) Item 3 c) Item 6 d) Item 5

- 13) It takes 30 minutes to empty a half-full tank by draining it at a constant rate. It is decided to simultaneously pump water into the half-full tank while draining it.

EXPORTS

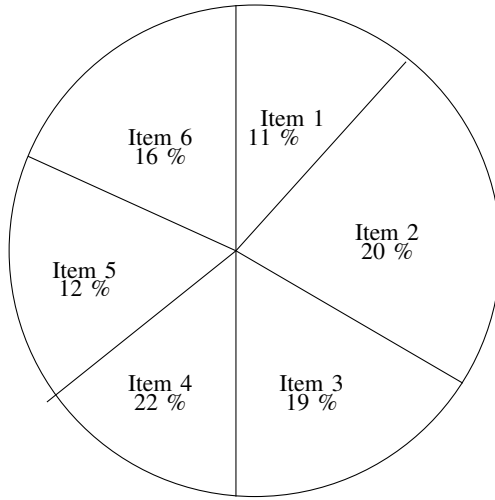


Fig. 1

REVENUES

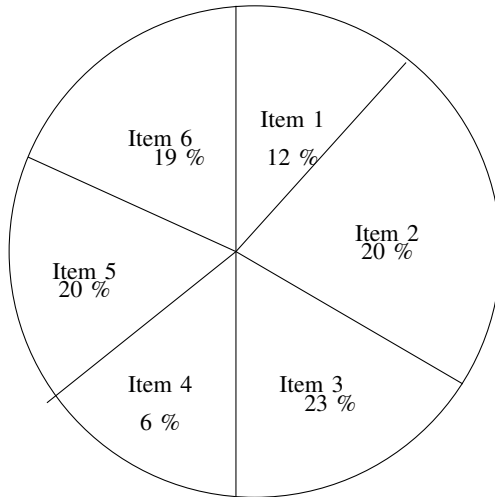


Fig. 2

What is the rate at which water has to be pumped in so that it gets fully filled in 10 minutes ?

- a) 4 times the draining rate
- b) 3 times the draining rate
- c) 2.5 times the draining rate
- d) 2 times the draining rate