3. How do you define total effective error in a measured quantity ?

- ○ Effective Error = Statistical Error + Total Fractional Error in the measured quantity
- ◉ Effective Error = Statistical Error + Systematic Error + Random Error
- ○ Effective Error = Statistical Error + Systematic Error + Random Error + Blunder
- ○ Other:

Clear selection

4. How many significant figures following numbers have: 0.000001511, 0.00001395, 0.001241, 0.00000006152 ?

- ○ respectively, 9, 8, 6, and 11 significant figures.
- ○ respectively, 10, 9, 7, and 12 significant figures.
- ◉ all numbers have 4 significant figures.
- ○ Significant figure in these numbers can't be calculated.

Clear selection

5. Given a 100 cm scale, you are asked to measure area of a table which has length = 70 cm and width = 35 . You come up with length = 68 cm and width = 34 cm. What will be the percent relative error in the area ?

- ○ 2.85 %
- ○ 0.0562 %
- ○ 11.26 %
- ◉ 5.63 %

Clear selection

6. Assume a quantity 'y' is related as y = x.t^2. The quantity 'x' and 't' have percent relative errors = 3.5 % and 1.3 %, respectively. What will be the resultant error in quantity 'y'.

- ○ 2.2 %
- ○ 4.8 %
- ○ 4.55 %
- ◉ 9.6 %

Clear selection

7. For a continuous random variable x, the probability distribution function f(x) represents,

- ○ Probability at a given value of x
- ○ Area under the curve to the right of x
- ○ the height of the function at x = 50 % of trials.
- ◉ the area under the curve at x

Clear selection

8. Which of the following is not correct for Binomial distribution ?

- ○ is a sequence of n identical trials
- ◉ the probabilities of success (1) or a failure (0) may change from one trial to the next
- ○ each outcome is referred to as a success (1) or a failure (0)
- ○ the trials are independent

Clear selection

9. In a high end micro-electronics industry, the manufacturer is interested to identify a chip with some defects occurring in each 1 million chips. In this case, which probably distribution has a great chance of applying ?

- ○ Gaussian distribution
- ○ Uniform distribution
- ○ Binomial distribution
- ◉ Poisson distribution

Clear selection

10. In a huge collection of marbles, 7% of the marbles have been found to display white defect inside them. If one randomly / unknowingly pick marbles from this collection until s(he) gets 20 marbles with white defect. What will be the probability of success?

- ○ 0.93
- ◉ 0.14
- ○ 0.07
- ○ Other:

Clear selection

11. In Gaussian distribution, the value of sigma (standard deviation) is always,

- ○ equals to the full-width at the half maxima
- ○ equal to zero
- ◉ greater than zero
- ○ less than zero

Clear selection

12. In polynomial regression one can draw nth order polynomial for n+1 data points. Imagine a case where n = 1, what will be outcome of the regression ?

- ◉ not possible to draw such a function
- ○ it will be a spline
- ○ it will represent linear regression
- ○ it will be 1/2 of a polynomial function at the highest value

Clear selection

13. A set of 118 data points spread over x,y coordinate system is best fitted using a second order polynomial of type y = 3x^2 + 1.5 x + 1, what will be the value of y at 2 ?

- ○ 9
- ○ 12
- ○ 15
- ◉ 16

Clear selection

14. The residual percentage error in an approximate solution using linear regression is found to be 0.009%, suggest the number of significant digits with highest order of confidence.

- ○ 4
- ○ 3
- ◉ 5
- ○ 2

Clear selection

15. In Newton's divided-difference interpolation, how one can improve the quality of interpolation ?

- ○ by implementing multiple-linear interpolation
- ○ by creating larger intervals between the data points
- ◉ by creating smaller intervals between the data points
- ○ by the spline interpolation

Clear selection

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