

Name:

Organization:

**INDIAN STATISTICAL INSTITUTE
SQC & OR UNIT, HYDERABAD**

**PART TIME CERTIFICATE COURSE IN
STATISTICAL QUALITY CONTROL**

SELECTION TEST

Time: 1 Hour

INSTRUCTIONS TO CANDIDATES

1. Answer all the questions.
2. For each question four alternative answers a, b, c, d are suggested. All you have to do is to pick up the correct answer from these and put cross [X] mark in appropriate box in the answer sheet enclosed at the end of this booklet.
3. Fill up the necessary details in the answer sheet before you start answering the question.
4. Do any rough work on the question paper only.
5. Wait for the signal to START.
6. Submit question paper and answer sheet to the invigilator while leaving the room.

1. Which of the following set of numbers has the highest variation?

(a) 1,0,1,0,1,0	(b) -1, -1, -1, -1, -1, -1
(c) 1,1,1,1,1,1	(d) 1,1,0, -1,0, -1

2. $(x\% \text{ of } y + y\% \text{ of } x)$ is equal to ?

(a) $x\%$ of y	(b) $y\%$ of x	(c) 2% of xy	(d) $xy\%$ of 3
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3. In a class of 60 students, 30 are fans of Sachin and 35 are fans of Shevag. If 5 students are fans of neither Sachin nor Shevag, then the number of fans of both Sachin and Shevag is

(a) 10	(b) 5	(c) 12	(d) 0
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4. The petrol tank of an automobile can hold g liters. If a liters was removed when the tank was full, what part of the full tank was removed?

(a) $g-a$	(b) a/g	(c) $(g-a)/a$	(d) $(g-a)/g$
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5. Rama traveled from A to B at 60 Kmph and comes back from B to A at 40 kmph. What is his average speed?

(a) 36kmph	(b) 48kmph	(c) 50kmph	(d) 75kmph
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6. A man sells two items on same price and if he gets 10% profit on one and 10% loss on the other then what he gets in whole deal?

(a) No loss no gain	(b) 2% loss	(c) 2% gain	(d) 1% loss
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7. There are two wheelers and four wheelers parked in an area. The number of vehicles so parked is 52. The total number of their wheels is 164. How many of these vehicles were two wheelers?

(a) 12	(b) 20	(c) 22	(d) 24
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8. What is the missing number in the series? 6, 11, 18, 27, 38, ?, 66

(a) 51	(b) 53	(c) 56	(d) 60
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9. A family went out for a walk. Daughter walked before the father. Son was walking behind the mother and ahead of father. Who walked last?

(a) Son	(b) Father	(c) Mother	(d) Daughter
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10. Average of 6 numbers is 8, what number should be added to it to make the average 9

(a) 15	(b) 16	(c) 17	(d) 18
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11. If $x + (1/x) = 4$, then $x - (1/x)$ is equal to

(a) -4	(b) 1	(c) 0	(d) None of these
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12. If $f(x) = (x + 1) / (x - 1)$, then the value of $f(x) + f(1/x)$ is equal to
- (a) $(x+1)/(x-1)$ (b) $(x-1)/(x+1)$ (c) 0 (d) none
13. The length of rectangular surface is increased by 15% and its breadth is decreased by 10%. What will net effects on its area?
- (a) 5% increases in area (b) 5% decrease in area
(c) 3.5% increase in area (d) None of these
14. If a and b are positive integers and $(a-b)/3.5 = 4/7$, then
- (a) $b < a$ (b) $b > a$ (c) $b = a$ (d) $b \geq a$
15. The number of nonempty subsets of the set $\{1, 2, 3, 4\}$ is equal to
- (a) 16 (b) 24 (c) 32 (d) 15
16. Two unbiased dies are rolled. The number of ways in which we get a total of 5 is
- (a) 5 (b) 2 (c) 4 (d) 3
17. $\int_0^3 (x^2 - 1) dx$
- (a) -4 (b) 6 (c) 0 (d) 1
18. $\frac{d}{dx} (x^2 \cdot e^x)$
- (a) $e^x x^2$ (b) $2 e^x x^2$ (c) 1 (d) $e^x (x^2 + 2x)$
19. The continued product of $\left[a^{1/8} + a^{-1/8} \right] \left[a^{1/8} - a^{-1/8} \right] \left[a^{1/4} + a^{-1/4} \right] \left[a^{1/2} + a^{-1/2} \right]$ is equal to
- (a) $a^{1/2} - a^{-1/2}$ (b) $a - a^{-1}$ (c) $a^2 - a^{-2}$ (d) $a + a^{-1}$
20. The value of $\log_{(base)5} [(125)(625)/25]$ is
- (a) 725 (b) 125 (c) 3125 (d) 5
21. If $9x - 3y = 12$ and $3x - 5y = 7$ then $6x - 2y = ?$
- (a) -5 (b) 4 (c) 2 (d) 8
22. From a batch of 3000 light bulbs, 100 were selected at random and tested. If 5 of the light bulbs in the sample were found to be defective, how many defective light bulbs would be expected in the entire batch?

- (a) 15 (b) 60 (c) 150 (d) 300
23. Arithmetic mean of six numbers is 20. If four of them add up to 100, what is the sum of the remaining two numbers
- (a) 10 (b) 100 (c) 40 (d) 20
24. If point P is on line segment AB, then which of the following is always true?
- (a) $AP = PB$ (b) $AP > PB$ (c) $PB > AP$ (d) $AB > AP$
25. In how many ways can the letters of the word 'MARKET' be arranged?
- (a) 72 (b) 144 (c) 360 (d) 720
26. You are having 31kg of rice. You are provided with a 1kg stone for weighing. In how many weights the 31kg of rice can be weighed.
- (a) 6 (b) 34 (c) 63 (d) 5
27. If the value of x lies between 0 & 1 which of the following is largest?
- (a) x (b) x^2 (c) $-x$ (d) $1/x$
28. There are 4 letter boxes in a post office. The number of ways in which a man can post 8 letters in this post office is
- (a) 8C_4 (b) 32 (c) 48 (d) 84
29. A motion was adopted by a vote of 5 to 3. What part of the total vote was against the motion.
- (a) $3/5$ (b) $5/8$ (c) $3/8$ (d) $5/3$
30. If 5% of p is the same as $2\frac{1}{2}\%$ of q. Then p:q is equal to
- (a) 2:1 (b) 1:2 (c) 5:2 (d) 1:20
