



## **SSC CGL (Tier - 2)**

SSC Combined Graduate Level Exam

**SSC CGL (Tier - 2) Online Exam Paper - 2016 "held on 02 December 2016" Morning Shift (Statistical**

## SSC CGL (Tier - 2) Online Exam Paper - 2016 "held on 02 December 2016" Morning Shift (Statistical Investigator)

**EXAM DATE :** 02-December-2016

**EXAM START TIME :** 10:00:00

**QID : 401** For determination of mode and median graphically, one considers:

**Options:**

- 1) Bar diagram and Ogive
- 2) Bar diagram and Line diagram
- 3) Histogram and Line diagram
- 4) Histogram and Ogive

**Correct Answer: Histogram and Ogive**

**QID : 402 -**

The value of k for which the function  $f(x) = \begin{cases} ke^{-3x}, & x > 0 \\ 0, & \text{elsewhere} \end{cases}$  is probability density function, is

**Options:**

- 1) 1
- 2) 2
- 3) 3
- 4) 1/3

**Correct Answer: 3**

**QID : 403** In the construction of cost of living index, commodities are selected by :

**Options:**

- 1) simple random sampling
- 2) stratified random sampling
- 3) systematic sampling
- 4) judgement/ purposive sampling.

**Correct Answer:** judgement/ purposive sampling.

**QID : 404** If x and y are uncorrelated variables then this implies :

**Options:**

- 1) the absence of any linear relationship between them
- 2) the absence of any quadratic relationship between them
- 3) the absence of any logarithmic relationship between them
- 4) the absence of any trigonometric relationship between them

**Correct Answer:** the absence of any linear relationship between them

**QID : 405** In simple random sampling of n units from a population of N units the quantity [ $1 - (n/N)$ ] is called the

**Options:**

- 1) sampling fraction
- 2) expansion factor
- 3) finite population correction factor
- 4) degrees of freedom

**Correct Answer:** finite population correction factor

**QID : 406** The coefficient of range of the weights of 10 students from the following data:

41,20,15,65,73,84,53,35,71,55 is

**Options:**

- 1) 1.433
- 2) 0.696
- 3) 0.675
- 4)

**Correct Answer:** 0.696

**QID : 407** Consider simple random sampling with replacement from a population of size N. The number of samples of size n is

**Options:**

- 1)  $N_{Pn}$
- 2)  $N_{Cn}$
- 3)  $N^n$
- 4) None of the options

**Correct Answer:**  $N^n$

**QID : 408 -**

Under usual notations used for Index Number calculation

$$\sum p_1 q_0 = 231, \quad \sum p_0 q_0 = 228$$

$$\sum p_1 q_1 = 295, \quad \sum p_0 q_1 = 283$$

the value of Paasche's index is :

**Options:**

- 1) 141.32
- 2) 132.78
- 3) 153.9
- 4) 104.24

**Correct Answer:** 104.24

**QID : 409** If a population consists of 10 units and SRSWOR is adopted, the probability of selecting a specified sample of 2 units is :

**Options:**

- 1)  $1/10$
- 2)  $1/45$
- 3)  $1/90$
- 4)  $1/100$

**Correct Answer:**  $1/45$

**QID : 410** In drawing a sample of size n under SRSWR from a population of size N, the probability that a specified member is included in the chosen sample is

Options:

1)  
 $\frac{1}{N}$

2)  
 $\frac{n}{N}$

3)  
 $1 - \left(1 - \frac{1}{N}\right)^n$

4)  
 $\frac{(N-1)^n}{N^n}$

Correct Answer: 3

QID : 411 Suppose a person would earn Rs. 10,000 in base period. Suppose the cost of living index increases by 20 over base period. Then the employers of that person increase his salary by Rs. 1500. Which of the following option is TRUE?

Options:

- 1) He is just able to maintain the same standard of living as in base period.
- 2) He should claim Rs 500/ as Dearness Allowance.
- 3) He can improve his standard of living as compared to base period.
- 4) He should claim Rs 2,000 as Dearness Allowance.

Correct Answer: He should claim Rs 500/ as Dearness Allowance.

QID : 412 The correlation coefficient between two variables X and Y is 0.4. The correlation coefficient between 2X and (Y) will be :

Options:

- 1) 0.4
- 2) 0.8
- 3) 0.4
- 4) 0.8

**Correct Answer: 0.4**

**QID : 413 Trace out the WRONG option from the following: (CLI= Cost of living index numbers)**

**Options:**

- 1) If group indices increase k times, so also CLI does.
- 2) CLI remains unchanged if all the group indices increase by a constant amount.
- 3) CLI helps determining Purchasing Power of Money.
- 4) Dearness Allowance is fixed by considering CLI.

**Correct Answer: CLI remains unchanged if all the group indices increase by a constant amount.**

**QID : 414 -**

A sample of 60 students is to be selected from a population of 480 students belonging to 3 different schools.

तीन अलग अलग स्कूलों के 480 छात्रों की समष्टि से चुने गए 60 छात्रों का प्रतिचयन किया जाता है।

School स्कूल	$N_i$ (Total No. of student) छात्रों की कुल संख्या	$n_i$ (sample size) प्रतिदर्श आमाप
A	120	$n_1$
B	200	$n_2$
C	160	$n_3$

Drawing a sample using proportional allocation technique would give  $n_1, n_2, n_3$  as

**Options:**

- 1) 15,25,20 respectively
- 2) 12,27,21 respectively

3) 10,30,20 respectively

4) 5,45,10 respectively

**Correct Answer: 15,25,20 respectively**

**QID : 415 Relationship between real wage and money wage is given by**

**Options:**

1) Money wage = Real wage

मौद्रिक मजदूरी = वास्तविक मजदूरी

2)

$$\text{Real wage} = \frac{\text{Cost of living index}}{\text{Money wage}} \times 100$$

$$\text{वास्तविक मजदूरी} = \frac{\text{निर्वाह सूचकांक}}{\text{मौद्रिक मजदूरी}} \times 100$$

3)

$$\text{Real wage} = \frac{\text{Money wage}}{\text{Cost of living index}} \times 100$$

$$\text{वास्तविक मजदूरी} = \frac{\text{मौद्रिक मजदूरी}}{\text{निर्वाह सूचकांक}} \times 100$$

4)

$$\text{Real wage} = \frac{\text{Money wage}}{\text{Price relation}} \times 100$$

$$\text{वास्तविक मजदूरी} = \frac{\text{मौद्रिक मजदूरी}}{\text{कीमत सम्बन्ध}} \times 100$$

**Correct Answer: 3**

**QID : 416 When the collected data is grouped with reference to time, we have**

**Options:**

- 1) Quantitative classification
- 2) Qualitative classification
- 3) Geographical classification
- 4) Chronological classifications

**Correct Answer: Chronological classifications**

**QID : 417** In SRSWOR of size  $n$  from a population with  $N$  units if  $p$  is the proportion of sampled units having a given attribute, then unbiased estimate of  $V(p)$  is

**Options:**

1)  
$$\frac{pq}{(n-1)N}$$

2)  
$$pq/n$$

3)  
$$N(N-n)pq/(n-1)$$

4)  
$$\frac{(N-n)pq}{N(n-1)}$$

**Correct Answer:**

$$\frac{(N-n)pq}{N(n-1)}$$



**QID : 418 -**

The data about the sales and advertisement expenditure of a firm is given below

	<b>Sales</b> (in crores of Rs.)	<b>Advertisement exp</b> (in crores of Rs.)
Means	40	6
Standard Deviation	10	1.5

The correlation coefficient between sales and advertisement expenditure is 0.9. The likely sales for a proposed advertisement expenditure of Rs 10 crore

**Options:**

- 1) Rs 64 crores
- 2) Rs. 67 crores
- 3) Rs. 70 crores
- 4) Rs. 58 crores

**Correct Answer: Rs 64 crores**

**QID : 419** Which type of sampling is one where only the first sample unit is selected at random and the remaining units are automatically selected in a definite sequence at equal spacing from one another. It is :

**Options:**

- 1) Multi stage sampling
- 2) Quota sampling
- 3) Systematic sampling
- 4) Area sampling

**Correct Answer: Systematic sampling**

**QID : 420 -**

If the mean and the standard deviation of  $n$  observations  $x_1, x_2, \dots, x_n$  be  $\bar{x}$  and  $\sigma$  respectively, then the mean and standard deviation of  $-x_1, -x_2, -x_3, \dots, -x_n$  are, respectively, :

**Options:**

1)  $\bar{x}, -\sigma$

2)  $-\bar{x}, \sigma$

3)  $\bar{x}, \sigma$

4)  $-\bar{x}, -\sigma$

**Correct Answer:**

$-\bar{x}, \sigma$

**QID : 421** A random sample of size  $n$  is drawn from a population of size  $N$  by SRSWOR method. Then the standard error of sample mean will be zero if  $n$  is

**Options:**

1)  $N - 1$

2)  $N$

- 3) tending to infinity
- 4) none of the options

Correct Answer: N

**QID : 422** The coefficient of correlation between two variables X and Y is 0.48. The covariance is 36. The variance of X is 16. The standard deviation of Y is :

**Options:**

- 1) 10.15
- 2) 13.32
- 3) 16.5
- 4) 18.75

Correct Answer: 18.75

**QID : 423** If 4,5,6,6,6,6,6,6,6,7 be a random sample from a Poisson population with parameter  $\lambda$ , then an unbiased estimate of  $\lambda$  is :

**Options:**

- 1) 4.2
- 2) 5
- 3) 5.8
- 4) 6

Correct Answer: 5.8

**QID : 424** There are 35 students in a hostel. If the number of students increases by 7, the expenses of the hostel increases by Rs. 42 per day while the average expenditure per head diminishes by Re. 1. The original expenditure of the hostel is:

**Options:**

- 1) Rs. 380
- 2) Rs. 420
- 3) Rs. 490
- 4) Rs. 510

Correct Answer: Rs. 420