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Computer Based Examination System

Exported On *	2022/06/27 11:35:16
Title *	Question Paper Answer Key
OES Exam *	GPSC08202101 / Statistical Officer / Completed / 2022-06-26

1	<table border="1"> <tr> <td><b>Question Description</b></td> <td>In a test of the hypothesis <math>H_0: \mu = 100</math> versus <math>H_a: \mu &gt; 100</math>, the power of the test when <math>\mu = 101</math> would be greatest for which of the following choices of sample size <math>n</math> and significance level <math>\alpha</math>?</td> </tr> <tr> <td><b>A</b></td> <td><math>n = 10, \alpha = 0.05</math></td> </tr> <tr> <td><b>B</b></td> <td><math>n = 10, \alpha = 0.01</math></td> </tr> <tr> <td><b>C</b></td> <td><math>n = 20, \alpha = 0.05</math></td> </tr> <tr> <td><b>D</b></td> <td><math>n = 20, \alpha = 0.01</math></td> </tr> <tr> <td><b>E</b></td> <td>None of the above</td> </tr> <tr> <td><b>Correct Answer</b></td> <td>C</td> </tr> <tr> <td><b>Marks</b></td> <td>1</td> </tr> </table>	<b>Question Description</b>	In a test of the hypothesis $H_0: \mu = 100$ versus $H_a: \mu > 100$ , the power of the test when $\mu = 101$ would be greatest for which of the following choices of sample size $n$ and significance level $\alpha$ ?	<b>A</b>	$n = 10, \alpha = 0.05$	<b>B</b>	$n = 10, \alpha = 0.01$	<b>C</b>	$n = 20, \alpha = 0.05$	<b>D</b>	$n = 20, \alpha = 0.01$	<b>E</b>	None of the above	<b>Correct Answer</b>	C	<b>Marks</b>	1
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<b>Marks</b>	1																

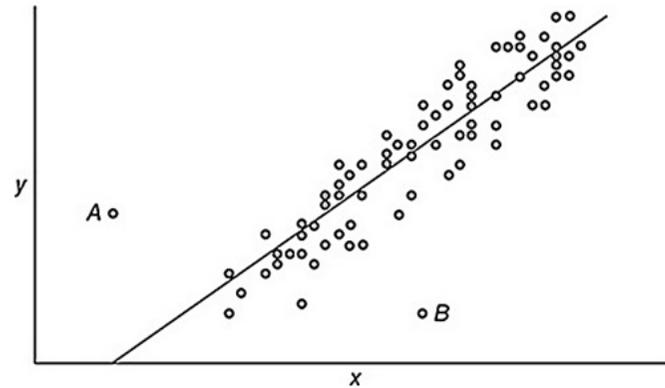
2

<b>Question Description</b>	An experiment is conducted in which the response variable is the average gain in participants' performance in the long jump. A two-sample t-test with a 5% level of significance will be used to analyze the results. If all else is kept the same, which of the following descriptions of a possible change in procedure is true?
<b>A</b>	Change from equal size treatment groups to very different size treatment groups would increase the power of the test.
<b>B</b>	Change from a 5% significance level to a 1% significance level would increase the power of the test.
<b>C</b>	Taking more careful measurements to reduce variability in the response would increase the power of the test.
<b>D</b>	Increasing the sample size would reduce the probability of a Type I error.
<b>E</b>	None of the above
<b>Correct Answer</b>	C
<b>Marks</b>	1

3

**Question Description**

The scatterplot below shows data points and the regression line for predicting  $y$  from  $x$ . Which statement is true about the effect of removing point A or B on the regression model?

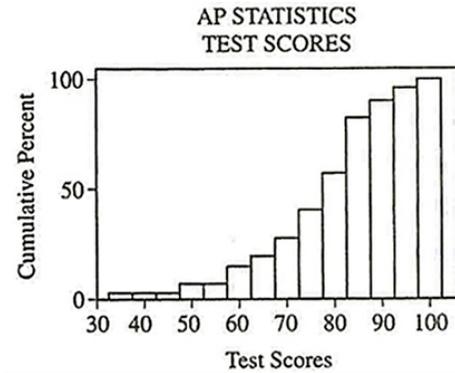


<b>A</b>	Removing A would decrease the slope but removing B would increase the slope.
<b>B</b>	Removing A would increase the slope but removing B would have little effect on the slope.
<b>C</b>	Removing A would decrease the correlation but removing B would increase the correlation.
<b>D</b>	Removing point A would increase the correlation and removing point B would not change the correlation.
<b>E</b>	None of the above
<b>Correct Answer</b>	B
<b>Marks</b>	1

4

**Question Description**

The figure below shows a cumulative relative frequency histogram of 40 scores on a test given in an AP Statistics class. Which of the following conclusions can be made from the graph?

**A**

There is greater variability in the lower 20 test scores than in the higher 20 test scores.

**B**

The median test score is less than 50.

**C**

Sixty percent of the students had test scores above 80.

**D**

The horizontal nature of the graph for the test scores of 60 and below indicates that those scores occurred most frequently.

**E**

None of the above

**Correct Answer**

A

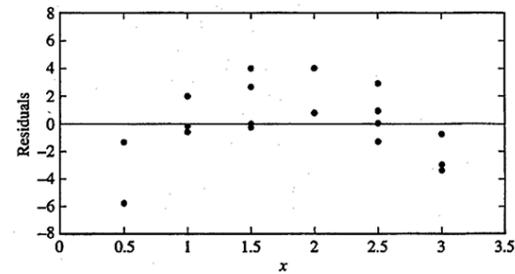
**Marks**

1

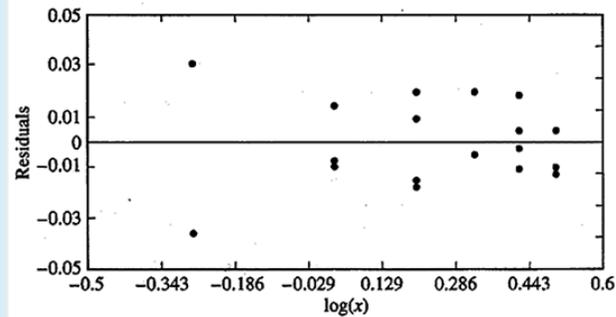
5

**Question Description**

Two measures  $x$  and  $y$  were taken on 18 subjects. The first of two regressions, Regression I, yielded  $\hat{y} = 24.5 + 16.1x$  and had the following residual plot.



The second regression, Regression II, yielded  $\log(\hat{y}) = 1.6 + 0.51 \log(x)$  and had the following residual plot.



Which of the following conclusions is best supported by the evidence above?

- A There is a linear relationship between  $x$  and  $y$ , and Regression I yields a better fit.
- B There is a linear relationship between  $x$  and  $y$ , and Regression II yields a better fit.
- C There is a negative correlation between  $x$  and  $y$ .
- D There is a nonlinear relationship between  $x$  and  $y$ , and Regression II yields a better fit.
- E None of the above

**Correct Answer**

D

**Marks**

1

6	<b>Question Description</b>	In the casino game of roulette, there are 38 slots for a ball to drop into when it is rolled around the rim of a revolving wheel: 18 red, 18 black, and 2 green. What is the probability that the first time a ball drops into the red slot is on the 8th trial (in other words, suppose you are betting on red every time-what is the probability of losing 7 straight times before you win the first time)?
	<b>A</b>	0.0278
	<b>B</b>	0.0112
	<b>C</b>	0.0053
	<b>D</b>	0.0101
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

7	<b>Question Description</b>	Each of 100 laboratory rats has available both plain water and a mixture of water and caffeine in their cages. After 24 hours, two measures were recorded for each rat: the amount of caffeine the rat consumed, $X$ , and the rat's blood pressure, $Y$ . The correlation between $X$ and $Y$ was 0.428. Which of the following conclusions is justified on the basis of this study?
	<b>A</b>	The correlation between $X$ and $Y$ in the population of rats is also 0.428.
	<b>B</b>	If the rats stop drinking the water/caffeine mixture, this would cause a reduction in their blood pressure.
	<b>C</b>	About 18 percent of the variation in blood pressure can be explained by a linear relationship between blood pressure and caffeine consumed.
	<b>D</b>	Rats with lower blood pressure do not like the water/caffeine mixture as much as do rats with higher blood pressure.
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

8

**Question Description**

The polynomial of least degree interpolation of the data (0, 4), (1, 5) (2, 8), (3, 13) is

**A**

4

**B**

3

**C**

2

**D**

1

**E**

None of the above

**Correct Answer**

C

**Marks**

1

9

**Question Description**

The analysis of a random sample of 500 households in a suburb of a large city indicates that a 98 percent confidence interval for the mean family income is (₹41,300, ₹58,630). Could this information be used to conduct a test of the null hypothesis  $H_0: \mu = 40,000$  against the alternative hypothesis  $H_a: \mu \neq 40,000$  at the  $\alpha = 0.02$  level of significance?

**A**

No, because the value of  $\mu$  is not known.

**B**

No, because it is not known whether the data are normally distributed.

**C**

Yes, since ₹40,000 is not contained in the 98 percent interval, the null hypothesis would be rejected in favor of the alternative, and it could be concluded that the mean family income is significantly different from ₹40,000 at the  $\alpha = 0.02$  level.

**D**

Yes, since ₹40,000 is not contained in the 98 percent interval, the null hypothesis would not be rejected, and it could be concluded that the mean family income is significantly different from ₹40,000 at the  $\alpha = 0.02$  level.

**E**

None of the above

**Correct Answer****C****Marks****1**

10	<b>Question Description</b>	The distribution of the diameters of a particular variety of oranges is approximately normal with a standard deviation of 0.3 inch. How does the diameter of an orange at the 67th percentile compare with the mean diameter?
	<b>A</b>	0.201 inch below the mean
	<b>B</b>	0.132 inch below the mean
	<b>C</b>	0.132 inch above the mean
	<b>D</b>	0.201 inch above the mean
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

11	<b>Question Description</b>	A test for heartworm in dogs shows a positive result in 96% of dogs that actually have heartworm, and shows a negative result in 98% of dogs with no heartworm. If heartworm actually occurs in 10% of dogs, what is the probability that a randomly selected dog that tested positive for heartworm actually has heartworm?
	<b>A</b>	11%
	<b>B</b>	18%
	<b>C</b>	84%
	<b>D</b>	88%
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

12

**Question Description**

The following two-way table resulted from classifying each individual in a random sample of residents of a small city according to level of education (with categories "earned at least a high school diploma" and "did not earn a high school diploma") and employment status (with categories "employed full time" and "not employed full time").

	Employed full time	Not employed full time	Total
Earned at least a high school diploma	52	40	92
Did not earn a high school diploma	30	35	65
Total	82	75	157

A

$$\frac{92 \times 52}{157}$$

B

$$\frac{92 \times 82}{157}$$

C

$$\frac{82 \times 52}{157}$$

D

$$\frac{65 \times 52}{157}$$

E

None of the above

**Correct Answer**

B

**Marks**

1

13

**Question Description**

An infrared thermometer measures the surface temperature of an object from a distance. The measurement errors for one particular model are approximately normally distributed with a mean of 0 degrees C and a standard deviation of 1.3 degrees C. If the temperature of an object is 20 degrees C, what is the probability that the thermometer will report the temperature as less than 18 degrees C?

**A**

0.023

**B**

0.062

**C**

0.097

**D**

0.903

**E**

None of the above

**Correct Answer**

B

**Marks**

1

14

**Question Description**

After graduation, you have the opportunity to open a local pizza restaurant. But to cover all your expenses as well as pay yourself a salary, you need an average revenue of about ₹9,000 per month. Anything less and you risk losing your business. You take a random sample of 30 different pizza restaurants similar to the one you hope to open and get data on their monthly sales. For the hypotheses

$H_0: \mu = ₹9,000$   $H_a: \mu > ₹9,000$

Describe a Type I error and its consequence.

**A**

The consequences of a Type I error cannot be determined without an  $\alpha$ -level.

**B**

You believe the average sales of pizza restaurants like yours is more than ₹9,000, so you open a pizza restaurant and have a high risk of losing your business.

**C**

You believe the average sales of pizza restaurants like yours is more than ₹9,000, so you open a pizza restaurant and have a high probability of a successful business.

**D**

You believe the average sales of pizza restaurants like yours is ₹9,000 or less, so you do not open a pizza restaurant yourself and will miss out on an opportunity to own a successful business.

**E**

None of the above

**Correct Answer**

B

**Marks**

1

15

**Question Description**

A local library has a scanner to detect library materials that have not been checked out. Each item has a chip somewhere inside. Upon checkout, the chip is deactivated so the scanner will not set off the alarm. The scanner has a 98% chance of detecting an active chip (meaning the material has not been checked out) and setting off the alarm. The scanner also has a 3% chance of sounding the alarm when someone passes through without an active chip. It is estimated that 0.5% of library customers actually try to leave the library with an active chip. What is the probability that, if the alarm sounds, the patron leaving the library has an item with an active chip?

**A**

0.0049

**B**

0.0348

**C**

0.1410

**D**

0.9700

**E**

None of the above

**Correct Answer**

C

**Marks**

1

16

<b>Question Description</b>	Which of the following is not an advantage of stratified random sampling over simple random sampling?
<b>A</b>	When done correctly, a stratified random sample is less biased than a simple random sample.
<b>B</b>	When done correctly, a stratified random sampling process has less variability from sample to sample than a simple random sample.
<b>C</b>	When done correctly, a stratified random sample can provide, with a smaller sample size, an estimate that is just as reliable as that of a simple random sample with a larger sample size.
<b>D</b>	A stratified random sample provides information about each stratum in the population as well as an estimate for the population as a whole, and a simple random sample does not.
<b>E</b>	None of the above
<b>Correct Answer</b>	A
<b>Marks</b>	1

17

**Question Description**

Leela has appeared in an examination which follows multiple choice questions, each having five possible answers. The probability that she knows an answer is 0.75. If she does not know an answer, she will guess, with the conditional probability  $\frac{1}{5}$  of being correct. The conditional probability that Leela knows the answer, given that she gives the correct answer, is

**A** 0.25**B** 0.80**C** 0.90**D** 0.94**E** None of the above**Correct Answer** D**Marks** 1

18

**Question Description**

Let  $X$  be the number of phone calls received at a call centre during business hours and  $Y$  be the number of calls received outside business hours, on a particular day. Assume that  $X$  and  $Y$  are independent, and follow the Poisson distribution with means  $\lambda_1 \neq \lambda_2$ . Then the conditional distribution of  $X$ , given the total number of calls received that day ( i.e.,  $X+Y$ ) is

**A**

Binomial

**B**

Poisson

**C**

Discrete Uniform

**D**

Negative Binomial

**E**

None of the above

**Correct Answer**

A

**Marks**

1

19

**Question Description**

Consider the following statements on the use of F-distribution:

1. It is used to test the equality of variances of two normal populations.
2. It is used to test the equality of variances of several normal populations.
3. It is used to test for the equality of means of several normal populations with identical variance.
4. It is used to test for the independence of two attributes in a contingency table.

Which of the above statements are correct?

**A**

1 and 3 only

**B**

2 and 3 only

**C**

1 and 4 only

**D**

1, 3 and 4 only

**E**

None of the above

**Correct Answer**

A

**Marks**

1

20

<b>Question Description</b>	When a patient complains to the doctor about a certain set of symptoms, the doctor diagnoses the patient with Condition A 15% of the time. If a patient with these symptoms is diagnosed with Condition A, he or she is diagnosed with Condition B 70% of the time. A patient with these symptoms that is not diagnosed with Condition A is diagnosed with Condition B 10% of the time. What is the probability that a patient with this set of symptoms will be diagnosed with at least one of these conditions?
<b>A</b>	0.235
<b>B</b>	0.250
<b>C</b>	0.765
<b>D</b>	0.850
<b>E</b>	None of the above
<b>Correct Answer</b>	A
<b>Marks</b>	1

21

**Question Description**

A study was conducted to test a new style of keyboard in preventing repetitive stress disorders. Volunteers who have had problems with such injuries were randomly assigned to use either a traditional keyboard or the new design. A significance test was conducted with the alternative hypothesis that a smaller proportion of those using the new keyboard will suffer injuries than those using the traditional keyboard. The resulting P-value was 0.07. Which is a correct interpretation of this P-value?

**A**

The null hypothesis should be rejected.

**B**

The null hypothesis should be accepted.

**C**

There is a 7% chance that the null hypothesis is correct.

**D**

There is a 7% chance of getting a difference between the two groups at least as large as the observed difference if the new keyboard is really no better at preventing injuries.

**E**

None of the above

**Correct Answer**

D

**Marks**

1

22

**Question Description**

A test engineer wants to estimate the mean gas mileage  $\mu$  (in miles per gallon) for a particular model of automobile. Eleven of these cars are subjected to a road test, and the gas mileage is computed for each car.

A dotplot of the 11 gas-mileage values is roughly symmetrical and has no outliers. The mean and standard deviation of these values are 25.5 and 3.01, respectively. Assuming that these 11 automobiles can be considered a simple random sample of cars of this model, which of the following is a correct statement?

**A**

A 95% confidence interval for  $\mu$  is  $25.5 \pm 2.228 \times \frac{3.01}{\sqrt{11}}$

**B**

A 95% confidence interval for  $\mu$  is  $25.5 \pm 2.201 \times \frac{3.01}{\sqrt{11}}$

**C**

A 95% confidence interval for  $\mu$  is  $25.5 \pm 2.228 \times \frac{3.01}{\sqrt{10}}$

**D**

A 95% confidence interval for  $\mu$  is  $25.5 \pm 2.201 \times \frac{3.01}{\sqrt{10}}$

**E**

None of the above

**Correct Answer**

A

**Marks**

1

23	<b>Question Description</b>	In an examination, marks obtained by the students in Physics, Mathematics and Statistics denoted by X, Y and Z are normally distributed with mean 50, 52 and 48 respectively and with standard deviation 15, 12 and 16 respectively. The distribution of $(X+Y+Z)$ is
	<b>A</b>	N (35, 53)
	<b>B</b>	N (55, 350)
	<b>C</b>	N (150, 625)
	<b>D</b>	N (625, 150)
	<b>E</b>	None of the above
	<b>Correct Answer</b>	<b>C</b>
	<b>Marks</b>	1

24	<b>Question Description</b>	A man buys 10 bulbs, each with independent exponentially distributed life times with the same mean, with the intention of using one bulb at a time and replacing it with another as soon as it fails. The distribution of the total duration of the 10 bulbs taken together is
	<b>A</b>	Exponential
	<b>B</b>	Normal
	<b>C</b>	Beta
	<b>D</b>	Gamma
	<b>E</b>	None of the above
	<b>Correct Answer</b>	<b>D</b>
	<b>Marks</b>	1

25

**Question Description**

Let X and Y be independent random variables, each having the uniform distribution on  $(-1, 2)$ . Then  $\text{Var}(X+Y)$  is equal to

**A**

$$\frac{3}{2}$$

**B**

$$\frac{5}{2}$$

**C**

4

**D**

6

**E**

None of the above

**Correct Answer**

A

**Marks**

1

26

**Question Description**

For a distribution of 10 observations, calculations showed that the first two moments about the origin are 3 and 46 respectively. It was however discovered that the observation 12 was wrongly written as 22. Then the correct value of mean and variance are respectively

**A**

2,12

**B**

2,8

**C**

4,12

**D**

4,8

**E**

None of the above

**Correct Answer**

B

**Marks**

1

27

**Question Description**

The probability that a visitor of the local botanical gardens walks through the rose garden is 0.65, and the probability that visitor meanders through the new meadow is 0.45. The probability that a visitor does both activities on the same day is 0.32. What is the probability that a visitor does at least one of the activities on a given day?

**A**

0

**B**

0.2925

**C**

0.78

**D**

0.22

**E**

None of the above

**Correct Answer**

C

**Marks**

1

28

**Question Description**

The total cholesterol level in a large population of people is strongly skewed right with a mean of 210 mg/dL and a standard deviation of 15 mg/dL. If random samples of size 16 are repeatedly drawn from this population, which of the following appropriately describes the sampling distribution of these sample means?

**A**

The shape is unknown with a mean of 210 and a standard deviation of 15.

**B**

The shape is somewhat skewed right with a mean of 210 and a standard deviation of 3.75.

**C**

The shape is approximately normal with a mean of 210 and a standard deviation of 15.

**D**

The shape is approximately normal with a mean of 210 and a standard deviation of 3.75.

**E**

None of the above

**Correct Answer**

B

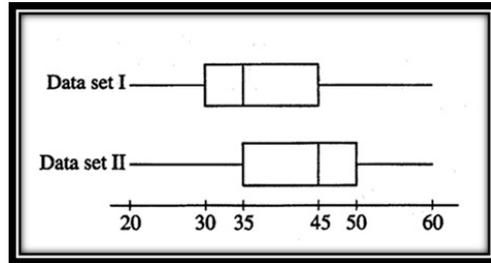
**Marks**

1

29

**Question Description**

The boxplots shown below summarize two data sets, I and II. Based on the boxplots, which of the following statements about these two data sets CANNOT be justified?

**A**

The range of data set I is equal to the range of data set II.

**B**

The interquartile range of data set I is equal to the interquartile range of data set II.

**C**

The median of data set I is less than the median of data set II.

**D**

Data set I and data set II have the same number of data points.

**E**

None of the above

**Correct Answer**

D

**Marks**

1

**Question Description**

Consider the following statements:

1. If  $F(n_1, n_2)$  represents an F variate with  $n_1$  and  $n_2$  degrees of freedom, then  $F(n_1, n_2)$  is distributed as  $\frac{1}{F(n_1, n_2)}$  variate.
2. In  $F(n_1, n_2)$  distribution if  $n_2 \rightarrow \infty$ , then  $n_1 F$  follows t-distribution with  $n_1$  degree of freedom.
3. If a statistic  $t$  follows Student's t-distribution with  $n$  degrees of freedom, then  $t^2$  follows F-distribution with  $(1, n)$  degrees of freedom.

Which of the above statements are correct?

<b>A</b>	1 and 2 only
<b>B</b>	2 and 3 only
<b>C</b>	1 and 3 only
<b>D</b>	1, 2 and 3 only
<b>E</b>	None of the above
<b>Correct Answer</b>	C
<b>Marks</b>	1

**Comprehension**

Read the Passage below and answer the following questions:

We in India have our own special problems. No one can deny that some of them are of a serious nature and must be attacked with *vigour* and determination. Our national objectives have been defined clearly. We aim at providing every citizen with basic necessities and complete freedom to lead a life of his or her choice. We aim to create a democratic society, strong and free, in which every citizen, irrespective of his religious beliefs, will occupy an equal and honoured place, and be given full and equal opportunities for growth and service. We aim at ending untouchability and doing away with the present inequalities of status and wealth. We are opposed to the concentration of wealth in a few hands.

**Question Description**

“No one can deny that some of them are of a serious nature and must be attacked with *vigour* and determination.” Identify from the following options, the one that comes closest in meaning to the overall sense that it conveys.

**A**

All can agree that some of them are not of a serious nature and must not be attacked with *vigour* and determination

**B**

Everyone cannot deny that some of them are of a serious nature and must be attacked with *vigour* and determination

**C**

No one can agree that some of them are not of a serious nature but must be attacked with *vigour* and determination

**D**

Everyone can agree that some of them are of a serious nature and must be attacked with *vigour* and determination

**E**

None of the above

**Correct Answer**

D

**Marks**

1

**Comprehension**

Read the Passage below and answer the following questions:

We in India have our own special problems. No one can deny that some of them are of a serious nature and must be attacked with *vigour* and determination. Our national objectives have been defined clearly. We aim at providing every citizen with basic necessities and complete freedom to lead a life of his or her choice. We aim to create a democratic society, strong and free, in which every citizen, irrespective of his religious beliefs, will occupy an equal and honoured place, and be given full and equal opportunities for growth and service. We aim at ending untouchability and doing away with the present inequalities of status and wealth. We are opposed to the concentration of wealth in a few hands.

**Question Description**

Identify from the options given, the one closest to the term “concentration” in the sense it is used in the passage

**A**

attentiveness

**B**

industry

**C**

accumulation

**D**

focusing

**E**

None of the above

**Correct Answer**

C

**Marks**

1

33

**Comprehension**

Read the Passage below and answer the following questions:

We in India have our own special problems. No one can deny that some of them are of a serious nature and must be attacked with *vigour* and determination. Our national objectives have been defined clearly. We aim at providing every citizen with basic necessities and complete freedom to lead a life of his or her choice. We aim to create a democratic society, strong and free, in which every citizen, irrespective of his religious beliefs, will occupy an equal and honoured place, and be given full and equal opportunities for growth and service. We aim at ending untouchability and doing away with the present inequalities of status and wealth. We are opposed to the concentration of wealth in a few hands.

**Question Description**

The passage implies that the real challenge taken up by our society is

**A**

ending untouchability and inequality

**B**

creating a democratic society

**C**

attacking problems with vigour

**D**

concentrating wealth among few people

**E**

None of the above

**Correct Answer**

A

**Marks**

1

34

**Comprehension**

Read the Passage below and answer the following questions:

We in India have our own special problems. No one can deny that some of them are of a serious nature and must be attacked with *vigour* and determination. Our national objectives have been defined clearly. We aim at providing every citizen with basic necessities and complete freedom to lead a life of his or her choice. We aim to create a democratic society, strong and free, in which every citizen, irrespective of his religious beliefs, will occupy an equal and honoured place, and be given full and equal opportunities for growth and service. We aim at ending untouchability and doing away with the present inequalities of status and wealth. We are opposed to the concentration of wealth in a few hands.

**Question Description**

“We are opposed to the concentration of wealth in a few hands.”

Select the closest version of re-writing the above sentence, from the options provided below:

**A**

We are not committed to concentrating wealth in many hands

**B**

We are supportive of not concentrating wealth in a few hands

**C**

We are not opposed to diluting wealth in a few hands

**D**

We are backing non-concentration of wealth in many hands.

**E**

None of the above

**Correct Answer**

B

**Marks**

1

35

**Comprehension**

Read the Passage below and answer the following questions:

We in India have our own special problems. No one can deny that some of them are of a serious nature and must be attacked with *vigour* and determination. Our national objectives have been defined clearly. We aim at providing every citizen with basic necessities and complete freedom to lead a life of his or her choice. We aim to create a democratic society, strong and free, in which every citizen, irrespective of his religious beliefs, will occupy an equal and honoured place, and be given full and equal opportunities for growth and service. We aim at ending untouchability and doing away with the present inequalities of status and wealth. We are opposed to the concentration of wealth in a few hands.

**Question Description**

Identify the option from the passage which is antonymous to the term “lethargy”

**A**

status

**B**

determination

**C**

vigour

**D**

problems

**E**

None of the above

**Correct Answer**

C

**Marks**

1

**Comprehension**

Read the Passage below and answer the following questions:

Those responsible for teaching young people have resorted indifferent periods in history to a variety of means for making their pupils learn. The earliest of those was the threat of punishment, which meant that the pupil who was slow, careless or inattentive risked either physical chastisement or the loss of some expected privilege or treat. Learning was thus to some extent associated with fear, particularly in the minds of those who found certain subjects hard to master. At a later period, pupils were encouraged to learn in the hope of some kind of reward. This often took the form of marks awarded daily or weekly for work done and sometimes of prizes given at the end of each year to the best scholars. Such a system appealed to the competitive spirit but it often had just as depressing an effect as the older system of punishment on the slow but willing pupil.

**Question Description**

Means adopted to teach the young pupils over the ages shows that slow learners found learning to be

**A**

associated with fear or depression

**B**

instilled with competitive spirit

**C**

threat of punishment or hope of reward

**D**

chastisement or loss of expected privilege or treat

**E**

None of the above

**Correct Answer**

A

**Marks**

1

**Comprehension**

Read the Passage below and answer the following questions:

Those responsible for teaching young people have resorted indifferent periods in history to a variety of means for making their pupils learn. The earliest of those was the threat of punishment, which meant that the pupil who was slow, careless or inattentive risked either physical chastisement or the loss of some expected privilege or treat. Learning was thus to some extent associated with fear, particularly in the minds of those who found certain subjects hard to master. At a later period, pupils were encouraged to learn in the hope of some kind of reward. This often took the form of marks awarded daily or weekly for work done and sometimes of prizes given at the end of each year to the best scholars. Such a system appealed to the competitive spirit but it often had just as depressing an effect as the older system of punishment on the slow but willing pupil.

**Question Description**

Identify the word or phrase from the passage, that means “took recourse to”

A encouraged to

B took the form of

C resorted to

D risked

E None of the above

**Correct Answer**

C

**Marks**

1

**Comprehension**

Read the Passage below and answer the following questions:

Those responsible for teaching young people have resorted indifferent periods in history to a variety of means for making their pupils learn. The earliest of those was the threat of punishment, which meant that the pupil who was slow, careless or inattentive risked either physical chastisement or the loss of some expected privilege or treat. Learning was thus to some extent associated with fear, particularly in the minds of those who found certain subjects hard to master. At a later period, pupils were encouraged to learn in the hope of some kind of reward. This often took the form of marks awarded daily or weekly for work done and sometimes of prizes given at the end of each year to the best scholars. Such a system appealed to the competitive spirit but it often had just as depressing an effect as the older system of punishment on the slow but willing pupil.

**Question Description**

According to the passage, in the olden days, the punishment was largely aimed at

**A**

the pupils who were slow learners

**B**

those in need of chastisement

**C**

those deprived of expected privilege or treat

**D**

slow, careless or inattentive pupils

<b>E</b>	None of the above
<b>Correct Answer</b>	D
<b>Marks</b>	1

**Comprehension**

Read the Passage below and answer the following questions:

Those responsible for teaching young people have resorted indifferent periods in history to a variety of means for making their pupils learn. The earliest of those was the threat of punishment, which meant that the pupil who was slow, careless or inattentive risked either physical chastisement or the loss of some expected privilege or treat. Learning was thus to some extent associated with fear, particularly in the minds of those who found certain subjects hard to master. At a later period, pupils were encouraged to learn in the hope of some kind of reward. This often took the form of marks awarded daily or weekly for work done and sometimes of prizes given at the end of each year to the best scholars. Such a system appealed to the competitive spirit but it often had just as depressing an effect as the older system of punishment on the slow but willing pupil.

**Question Description**

The passage implies that marks or prizes are undesirable because they are meant as incentives for

**A**

the weak pupils

**B**

the best scholars

**C**

the slow learners

**D**

pupils in depression

**E**

None of the above

**Correct Answer**

B

**Marks**

1

**Comprehension**

Read the Passage below and answer the following questions:

Those responsible for teaching young people have resorted indifferent periods in history to a variety of means for making their pupils learn. The earliest of those was the threat of punishment, which meant that the pupil who was slow, careless or inattentive risked either physical chastisement or the loss of some expected privilege or treat. Learning was thus to some extent associated with fear, particularly in the minds of those who found certain subjects hard to master. At a later period, pupils were encouraged to learn in the hope of some kind of reward. This often took the form of marks awarded daily or weekly for work done and sometimes of prizes given at the end of each year to the best scholars. Such a system appealed to the competitive spirit but it often had just as depressing an effect as the older system of punishment on the slow but willing pupil.

**Question Description**

The passage shows that the adverse effect of “reward” is seen mainly

**A**

in the competitive spirit

**B**

on the best scholars

**C**

in marks and prizes

**D**

on the slow but willing pupils

**E**

None of the above

**Correct Answer**

D

**Marks**

1

41	<b>Question Description</b>	India set to launch 1st Human Space Mission Gaganyaan& 1st Human Ocean Mission in which year?
	<b>A</b>	2026
	<b>B</b>	2023
	<b>C</b>	2025
	<b>D</b>	2024
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

42	<b>Question Description</b>	Which country has built World's largest petroleum research centre?
	<b>A</b>	Iran
	<b>B</b>	UAE
	<b>C</b>	Kuwait
	<b>D</b>	Qatar
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

43	<b>Question Description</b>	Federation Cup, World Cup, Allywyn International Trophy and Challenge Cup are awarded to winners of
	<b>A</b>	Tennis
	<b>B</b>	Volleyball
	<b>C</b>	Basketball
	<b>D</b>	Cricket
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

44	<b>Question Description</b>	In which state, the Department of Posts delivered mail using a drone for the first time?
	<b>A</b>	Kerala
	<b>B</b>	Gujarat
	<b>C</b>	Uttar Pradesh
	<b>D</b>	Goa
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

45

<b>Question Description</b>	<b>Who among the following has recently become the first batter in international cricket history to score nine consecutive half-centuries in all three formats of cricket?</b>
<b>A</b>	Babar Azam
<b>B</b>	Joe Root
<b>C</b>	Rohit Sharma
<b>D</b>	Jos Buttler
<b>E</b>	None of the above
<b>Correct Answer</b>	A
<b>Marks</b>	1

46	<b>Question Description</b>	The pass located at the southern end of the Nilgiri Hills in south India is called
	<b>A</b>	the Palghat gap
	<b>B</b>	the Bhorghat pass
	<b>C</b>	the Thalghat pass
	<b>D</b>	the Bolan pass
	<b>E</b>	None of the above
	<b>Correct Answer</b>	A
	<b>Marks</b>	1

47	<b>Question Description</b>	The purpose of choke in tube light is ?
	<b>A</b>	To decrease the current
	<b>B</b>	To increase the current
	<b>C</b>	To decrease the voltage momentarily
	<b>D</b>	To increase the voltage momentarily
	<b>E</b>	None of the above
	<b>Correct Answer</b>	D
	<b>Marks</b>	1

48	<b>Question Description</b>	The books 'Loktantra ke Swar' and 'The Republican Ethic' have selected speeches of _____.
	<b>A</b>	Atal Bihari Vajpayee
	<b>B</b>	Manmohan Singh
	<b>C</b>	Narendra Modi
	<b>D</b>	Ram Nath Kovind
	<b>E</b>	None of the above
	<b>Correct Answer</b>	D
	<b>Marks</b>	1

49	<b>Question Description</b>	The world's first wildlife conservation bond Has been issued by the World Bank for which animal?
	<b>A</b>	White elephant
	<b>B</b>	Black Rhinoceros
	<b>C</b>	Asiatic Lion
	<b>D</b>	Bengal Tiger
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

50	<b>Question Description</b>	India's first 'Amrit Sarovar' has been established in Rampur of which state?
	<b>A</b>	Haryana
	<b>B</b>	Uttar Pradesh
	<b>C</b>	Kerala
	<b>D</b>	Telangana
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

51	<b>Question Description</b>	The present age of Bob is equal to Abby's age 8 years ago. Four years hence, the respective ratio between Bob's age and Abby's age will be 4 : 5 at that time. What is Bob's present age?
	<b>A</b>	24 years
	<b>B</b>	32 years
	<b>C</b>	40 years
	<b>D</b>	28 years
	<b>E</b>	None of the above
	<b>Correct Answer</b>	D
	<b>Marks</b>	1

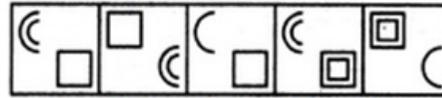
52

**Question Description**

Select a suitable figure from the Answer Figures that would replace the question mark (?).

**Problem Figures:**

(A) (B) (C) (D)

**Answer Figures:**

(1) (2) (3) (4) (5)

**A**

1

**B**

2

**C**

3

**D**

4

**E**

None of the above

**Correct Answer**

B

**Marks**

1

53

**Question Description**

Each question presents a situation and asks you to make a judgment regarding that particular circumstance. Choose an answer based on given information.

Sonika is planning a special birthday dinner for her husband's 35th birthday. She wants the evening to be memorable, but her husband is a simple man who would rather be in jeans at a baseball game than in a suit at a fancy restaurant. Which restaurant below should sonika choose?

**A**

Alfredo's offers fine Italian cuisine and an elegant Tuscan decor. Patrons will feel as though they've spent the evening in a luxurious Italian villa.

**B**

Pancho's Mexican Buffet is an all-you-can-eat family style smorgasbord with the best tacos in town.

**C**

The Parisian Bistro is a four-star French restaurant where guests are treated like royalty. Chef Dilbert Olay is famous for his beef bourguignon.

**D**

Marty's serves delicious, hearty meals in a charming setting reminiscent of a baseball clubhouse in honor of the owner, Marty Lester, a former major league baseball all-star.

**E**

None of the above

**Correct Answer**

D

**Marks**

1

54

**Question Description**

In a class, there are 36 very tall boys. If these constitute three-fourths of the boys and the total number of boys is two-thirds of the total number of students in the class, what is the total number of girls in the class?

**A**

36

**B**

72

**C**

24

**D**

48

**E**

None of the above

**Correct Answer**

C

**Marks**

1

55

**Question Description**

In question, some statements are given, followed by two conclusions I and II. You have to consider the statements to be true, even if they seem to be at variance from commonly known facts. You have to decide which of the given conclusions, if any, follow from the given statements. Indicate your answer.

Statements :

All bottles are jugs.

All pans are jugs.

Some jugs are not mugs.

Conclusions :

I. Some bottles are not pans.

II. Some mugs may not be jugs.

**A**

If only conclusion I follow

**B**

If only conclusion II follow

**C**

If neither conclusion I nor conclusion II follows

**D**

If both the conclusions follow

**E**

None of the above

**Correct Answer**

B

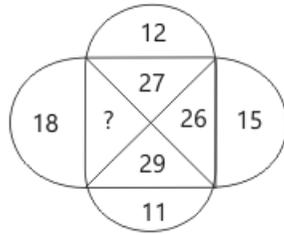
**Marks**

1

56

**Question Description**

Find missing number

**A**

22

**B**

35

**C**

25

**D**

30

**E**

None of the above

**Correct Answer**

D

**Marks**

1

57	<b>Question Description</b>	Following questions are based on the five three-digit numbers given below: 284 , 312 , 437 , 585 , 696 If 2 is added to the first digit of each of the numbers how many numbers thus formed will be divisible by three?
	<b>A</b>	None
	<b>B</b>	One
	<b>C</b>	Two
	<b>D</b>	Three
	<b>E</b>	None of the above
	<b>Correct Answer</b>	A
	<b>Marks</b>	1
58	<b>Question Description</b>	A boat running downstream covers a distance of 16 km in 2 hours while for covering the same distance upstream, it takes 4 hours. What is the speed of the boat in still water ?
	<b>A</b>	4 kmph
	<b>B</b>	6 kmph
	<b>C</b>	8 kmph
	<b>D</b>	3.5 kmph
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

59

**Question Description**

Sudesh starts driving from point A and drives 12 km towards north. He takes a right turn and drive 20 km. He now drives 8 km after taking a left turn. Finally he takes a left turn; and drives 20 km and stops at point B.

How far is point A with respect to point B?

**A**

18 km

**B**

20 km

**C**

35 km

**D**

25 km

**E**

None of the above

**Correct Answer**

B

**Marks**

1

60	<b>Question Description</b>	Pointing to a boy in a photograph, a girl said, "His father's mother is the mother-in-law of my brother's mother." How is the person in photograph related to the girl?
	<b>A</b>	Maternal Uncle
	<b>B</b>	Grandfather
	<b>C</b>	Brother
	<b>D</b>	Paternal Uncle
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

61	<b>Question Description</b>	BLOCKED : YOLXPVW :: ? : OZFMMXS
	<b>A</b>	LAUNNCH
	<b>B</b>	RESULTS
	<b>C</b>	LABOURS
	<b>D</b>	DEBATES
	<b>E</b>	None of the above
	<b>Correct Answer</b>	A
	<b>Marks</b>	1

62

**Question Description**

Which letter replaces the question mark?

53	J	49
82	X	37
36	L	15
14	?	98

**A**

W

**B**

Z

**C**

M

**D**

C

**E**

None of the above

**Correct Answer**

D

**Marks**

1

63

<b>Question Description</b>	Select the one which is different from the other three responses.
<b>A</b>	(96, 24)
<b>B</b>	(39, 18)
<b>C</b>	(81, 54)
<b>D</b>	(82, 64)
<b>E</b>	None of the above
<b>Correct Answer</b>	D
<b>Marks</b>	1

64

**Question Description**

There are six Indian cricketers, namely Virat, Rohit, Dhoni, Raina, Ishant, and Rahane. Among them two are batsmen, while others are wicket keeper, fast bowler, all rounder and spinner, though not necessarily in the same order. Also, each of these cricketers belongs to a different city, namely Chandigarh, Delhi, Ranchi, Chennai, Mumbai and Jaipur.

I. Virat, a fast bowler, is neither from Chennai nor from Jaipur.

II. The one who is from Mumbai is a spinner. Neither Raina nor Rohit is from Mumbai.

III. Rohit is the all-rounder of the team and is from Jaipur.

IV. Virat is not from Ranchi while Rahane is not from Chennai.

V. Raina the wicket keeper is from Delhi. Neither Dhoni nor Rahane is a spinner.

Who among the following is from Chandigarh?

**A**

Dhoni

**B**

Virat

**C**

Ishant

**D**

Rahane

**E**

None of the above

**Correct Answer**

B

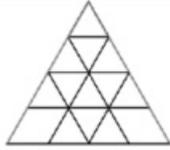
**Marks**

1

65

**Question Description**

Consider the following figure and answer the item that follow:



What is total number of triangles in the above grid ?

**A**

27

**B**

26

**C**

23

**D**

22

**E**

None of the above

**Correct Answer**

C

**Marks**

1

66

**Question Description**

Champak takes a test called RAT which comprises 28 questions. In RAT three marks are awarded for each correct response, one mark is deducted for each incorrect response and there are no marks for unattempted questions. If he scores more than 22 marks in RAT, then what is the maximum possible number of incorrect responses that he could have marked?

**A**

14

**B**

15

**C**

16

**D**

17

**E**

None of the above

**Correct Answer**

B

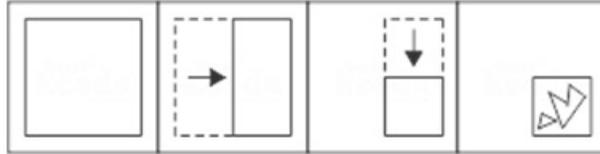
**Marks**

1

67

**Question Description**

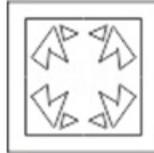
A piece of a paper is folded and cut as shown below in the Question Figures. Indicate how it will appear when opened.



**A**



**B**



**C**



**D**



**A**

A

**B**

B

**C**

C

**D**

D

**E**

None of the above

68

**Question Description**

select the related word/letters/number from the given alternatives.

225 : 12 : 435 : ?

**A**

12

**B**

20

**C**

25

**D**

19

**E**

None of the above

**Correct Answer**

D

**Marks**

1

69

**Question Description**

In a certain code language, 'kewxas huma deko' means 'she is eating apples'; 'kewtepo qua' means 'she sells toys' and 'sullimdeko' means 'I like apples'. Which word in that language means 'she' and 'apples'?

**A**

xas&amp;deko

**B**

xas&amp;kew

**C**

kew&amp;deko

**D**

kew&amp;xas

**E**

None of the above

**Correct Answer**

C

**Marks**

1

70

**Question Description**

From the following series, find-out the missing number

24, 12, 12, 18, ? 90

**A**

46

**B**

36

**C**

56

**D**

66

**E**

None of the above

**Correct Answer**

B

**Marks**

1

71

**Question Description**

If 6th March, 2005 is Monday, what was the day of the week on 6th March, 2004?

**A**

Sunday

**B**

Saturday

**C**

Tuesday

**D**

Wednesday

**E**

None of the above

**Correct Answer**

A

**Marks**

1

72	<b>Question Description</b>	If first, third and sixth letters of the word “LINGUIST” are changed to their immediately preceding letters as per English alphabet series and fourth and seventh letters are changed to their immediately succeeding letters as per English alphabet series, then how many letters (in English alphabet series) are there between the third and fifth letters of the newly formed word?
	<b>A</b>	5
	<b>B</b>	6
	<b>C</b>	7
	<b>D</b>	8
	<b>E</b>	None of the above
	<b>Correct Answer</b>	C
	<b>Marks</b>	1

73	<b>Question Description</b>	AERIE : EAGLE::?
	<b>A</b>	bridge : architect
	<b>B</b>	unit : apartment
	<b>C</b>	kennel : veterinarian
	<b>D</b>	house : person
	<b>E</b>	None of the above
	<b>Correct Answer</b>	D
	<b>Marks</b>	1

74	<b>Question Description</b>	A wheel that has 6 cogs is meshed with a larger wheel of 14 cogs. When the smaller wheel has made 21 revolutions, then the number of revolutions mad by the larger wheel is:
	<b>A</b>	4
	<b>B</b>	9
	<b>C</b>	12
	<b>D</b>	49
	<b>E</b>	None of the above
	<b>Correct Answer</b>	B
	<b>Marks</b>	1

75	<b>Question Description</b>	A watch, which loses time uniformly, was observed to be 5 minutes fast at 8.00 p.m. on Thursday. It was noticed to be 7 minutes slow at 8.00 a.m. on the subsequent Monday. When did the watch show the correct time ?
	<b>A</b>	7 a.m. Saturday
	<b>B</b>	7 a.m. on Friday
	<b>C</b>	10 a.m. on Sunday
	<b>D</b>	11 a.m. on Friday
	<b>E</b>	None of the above
	<b>Correct Answer</b>	A
	<b>Marks</b>	1