

# DU JAT 2021 PAPER (SHIFT 1)



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Topic:- JAT01

1) What is the value of  $80 * 4 : 2 ^ A 30 \# 15 B \# 30 * 2$ , if

# denotes -

\* denotes /

: denotes +

^ denotes x

A denotes (

B denotes )

[Question ID = 4372]

1. 150

[Option ID = 17485]

2. 35

[Option ID = 17486]

3. 185

[Option ID = 17487]

4. 315

[Option ID = 17488]

Correct Answer :-

- 35

[Option ID = 17486]

2)

**Question:** If  $\bar{x}_1$  and  $\bar{x}_2$  are the means of two distributions and  $\bar{x}$  is the mean of the combined distribution, then  $\bar{x}_1 < \bar{x} < \bar{x}_2$  can be deduced using:

Statement a.

Statement b.

[Question ID = 4373]

1. Statement (a) ALONE is sufficient, but statement (b) is ALONE not sufficient.

[Option ID = 17489]

2. Statement (b) ALONE is sufficient, but statement (A) is ALONE not sufficient.

[Option ID = 17490]

3. Both statements TOGETHER are sufficient, but neither statement ALONE is sufficient.

[Option ID = 17491]

4. Either statements (a) and (b) ALONE are sufficient.

[Option ID = 17492]

Correct Answer :-

- Both statements TOGETHER are sufficient, but neither statement ALONE is sufficient.

[Option ID = 17491]

3) A Delhi-Meerut train leaves for Meerut every thirty-five minutes from New Delhi train station. A reservation clerk told a passenger that the train had already left twelve minutes ago and the next one will leave at 10.40 p.m. If the first train of the day left at 9:15 a.m., how many trains had left before the 10:40 p.m. train and at what time was this information given to the passenger?

[Question ID = 4374]

1. 23, 10.50 p.m.

[Option ID = 17493]

2. 22, 9.53 p.m.

[Option ID = 17494]

3. 22, 10.05 p.m.

[Option ID = 17495]

4. 23, 10.17 p.m.

[Option ID = 17496]

Correct Answer :-

- 23, 10.17 p.m.

[Option ID = 17496]

4) Read the following information and answer the question

Neena started cycling from her home to reach the COVID-19 vaccination camp. She rode along the following path:

1. She started from her home and rode straight for 25 K.M.

2. Turned right and rode for 20 K.M.

3. Turned left and rode for 25 K.M.

4. Turned right and rode for 30 K.M.

5. Turned left and rode for 30 K.M.

Turned right and rode for 10 K.M. and reached the vaccination camp.

Find the shortest distance between her home and the vaccination camp.

[Question ID = 4375]

1. 140 K.M.

[Option ID = 17497]

2. 100 K.M.

- [Option ID = 17498]  
3. 50 K.M.  
[Option ID = 17499]  
4. 40 K.M.  
[Option ID = 17500]



Correct Answer :-

- 100 K.M.

[Option ID = 17498]

5) Look at the series: 18,21,19,22,20,23, ... What number should come next?

[Question ID = 4376]

1. 22  
[Option ID = 17501]  
2. 21  
[Option ID = 17502]  
3. 23  
[Option ID = 17503]  
4. 20  
[Option ID = 17504]

Correct Answer :-

- 21

[Option ID = 17502]

6) Pointing to a girl, Sagar said “She is the only granddaughter of the son of my father’s sister. How is the girl related to Sagar?

[Question ID = 4377]

1. Niece  
[Option ID = 17505]  
2. Sister  
[Option ID = 17506]  
3. Grand-daughter  
[Option ID = 17507]  
4. Aunt  
[Option ID = 17508]

Correct Answer :-

- Grand-daughter

[Option ID = 17507]

7) Pointing to a person, Deepu said to a woman, "His mother is the daughter of your father." How was the woman related to the person?

[Question ID = 4378]

1. Son  
[Option ID = 17509]  
2. Brother  
[Option ID = 17510]  
3. Aunt  
[Option ID = 17511]  
4. Mother  
[Option ID = 17512]

Correct Answer :-

- Aunt

[Option ID = 17511]

8) In the given question, two statements are followed by two conclusions numbered I and II. You have to take the given two statements to be true, even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follow from the two given statements, disregarding commonly known facts.

Statement: All toys are Ball.  
No Ball is Cat.  
Some Cats are not Dove.  
Conclusion: I: Some toys are Dove.  
II: All toys are Dove.

Choose one of the following:

[Question ID = 4379]

1. Only conclusion I follows  
[Option ID = 17513]  
2. Only conclusion II follows  
[Option ID = 17514]  
3. Either I or II follows  
[Option ID = 17515]  
4. Neither I nor II follows  
[Option ID = 17516]

Correct Answer :-

- Neither I nor II follows

[Option ID = 17516]

9) In the given question, two statements are followed by two conclusions numbered I and II. You have to take the given two statements to be true, even if they seem to be at variance from commonly known facts. Read the conclusions and then decide which of the given conclusions logically follow from the two given statements, disregarding commonly known facts.

Statement: All sparrows are birds.

No sparrow is crow.

Conclusion: I: Some birds are not crow.

II: All birds are crow.

Choose one of the following:

[Question ID = 4380]

1. Only conclusion I follows

[Option ID = 17517]

2. Only conclusion II follows

[Option ID = 17518]

3. Either I or II follows

[Option ID = 17519]

4. Neither I nor II follows

[Option ID = 17520]

Correct Answer :-

- Only conclusion I follows

[Option ID = 17517]

10) In the following question, one of the terms in the number series is missing. Choose the correct alternative:

0, 6, ?, 60, 120

[Question ID = 4381]

1. 12

[Option ID = 17521]

2. 24

[Option ID = 17522]

3. 25

[Option ID = 17523]

4. 10

[Option ID = 17524]

Correct Answer :-

- 24

[Option ID = 17522]

11) In the following question, one of the terms in the number series is missing. Choose the correct alternative:

2, 6, 12, ?, 30

[Question ID = 4382]

1. 20

[Option ID = 17525]

2. 24

[Option ID = 17526]

3. 15

[Option ID = 17527]

4. 25

[Option ID = 17528]

Correct Answer :-

- 20

[Option ID = 17525]

12) A person moves 10 km in the north direction. He takes a left and travels 4 km. Then he takes a right and travels 5 km. There he again takes a right and travels 12 km. Find his displacement.

[Question ID = 4383]

1. 13 km

[Option ID = 17529]

2. 10 km

[Option ID = 17530]

3. 17 km

[Option ID = 17531]

4. 25 km

[Option ID = 17532]

Correct Answer :-

- 17 km

[Option ID = 17531]

13) If the word “CONSTRUCTIONS” is written in number code as “94”. What will be number code for the word “COSMETICS”?

[Question ID = 4384]

1. 45

[Option ID = 17533]

2. 64

[Option ID = 17534]

3. 54

[Option ID = 17535]

4. 63

[Option ID = 17536]

Correct Answer :-

- 63

14) Prateek ranks 12<sup>th</sup> from the top and 22<sup>nd</sup> from the bottom in a class. How many students are there in the class?

[Question ID = 4385]

1. 32

[Option ID = 17537]

2. 33

[Option ID = 17538]

3. 34

[Option ID = 17539]

4. 35

[Option ID = 17540]

Correct Answer :-

- 33

[Option ID = 17538]

15) In a queue, Ramesh is 18<sup>th</sup> from the front while Suresh is 16<sup>th</sup> from the back. If Satish is 25<sup>th</sup> from the front and is exactly in the middle of Ramesh and Suresh. Find the total number of persons in the whole queue.

[Question ID = 4386]

1. 45

[Option ID = 17541]

2. 46

[Option ID = 17542]

3. 47

[Option ID = 17543]

4. 48

[Option ID = 17544]

Correct Answer :-

- 47

[Option ID = 17543]

16) Read the paragraph and answer the following question

In a college, 5 courses— a1, a2, a3, a4 and a5, each of 1 month duration, will be taught from January to May, only one at a time, by Professors b1, b2, b3, b4 and b5. b1 will teach course a2 but not in the month of April or May. b2 will teach course a1 in the month of March. b3 will teach in the month of January but will not teach course a3 or a4.

Which course will be taught by b4?

[Question ID = 4387]

1. a3

[Option ID = 17545]

2. a5

[Option ID = 17546]

3. a4

[Option ID = 17547]

4. either a3 or a4

[Option ID = 17548]

Correct Answer :-

- either a3 or a4

[Option ID = 17548]

17) Read the paragraph and answer the following question

In a college, 5 courses— a1, a2, a3, a4 and a5, each of 1 month duration, will be taught from January to May, only one at a time, by Professors b1, b2, b3, b4 and b5. b1 will teach course a2 but not in the month of April or May. b2 will teach course a1 in the month of March. b3 will teach in the month of January but will not teach course a3 or a4.

Which Professor's course will immediately follow course a2?

[Question ID = 4388]

1. b1

[Option ID = 17549]

2. b2

[Option ID = 17550]

3. b4

[Option ID = 17551]

4. None of the options

[Option ID = 17552]

Correct Answer :-

- b2

[Option ID = 17550]

18) Read the paragraph and answer the following question

In a college, 5 courses— a1, a2, a3, a4 and a5, each of 1 month duration, will be taught from January to May, only one at a time, by Professors b1, b2, b3, b4 and b5. b1 will teach course a2 but not in the month of April or May. b2 will teach course a1 in the month of March. b3 will teach in the month of January but will not teach course a3 or a4.

Which course will be taught in January?

[Question ID = 4389]

1. a1

[Option ID = 17553]

2. a5

[Option ID = 17554]

3. a2

[Option ID = 17555]

4. Data not sufficient

[Option ID = 17556]

Correct Answer :-

- a5

[Option ID = 17554]

19) Study the given table and answer the following question.

Percentage of marks obtained by five students of class 6<sup>th</sup> in five different subjects in a school. The marks given in brackets indicate the maximum marks for a particular subject.

Student /Subject	English (100)	Science (125)	Mathematics (150)	Social Studies (75)	Hindi (50)
Himanshu	67	84	70	64	90
Prateek	59	72	74	88	84
Keshav	66	90	84	80	76
Maanav	71	66	80	66	86
Suraj	63	76	88	68	72

Calculate Suraj's overall percentage of marks.

[Question ID = 4390]

1. 75.2%

[Option ID = 17557]

2. 75.4%

[Option ID = 17558]

3. 76.2%

[Option ID = 17559]

4. 76.5%

[Option ID = 17560]

Correct Answer :-

- 75.4%

[Option ID = 17558]

20) Study the given table and answer the following question.

Percentage of marks obtained by five students of class 6<sup>th</sup> in five different subjects in a school. The marks given in brackets indicate the maximum marks for a particular subject.

Student /Subject	English (100)	Science (125)	Mathematics (150)	Social Studies (75)	Hindi (50)
Himanshu	67	84	70	64	90
Prateek	59	72	74	88	84
Keshav	66	90	84	80	76
Maanav	71	66	80	66	86
Suraj	63	76	88	68	72

If passing marks for the Science subject is 95 marks, then find out how many students passed in the subject?

[Question ID = 4391]

1. 2

[Option ID = 17561]

2. 4

[Option ID = 17562]

3. 5

[Option ID = 17563]

4. 3

[Option ID = 17564]

Correct Answer :-

- 3

[Option ID = 17564]

21) Study the given table and answer the following question.

Percentage of marks obtained by five students of class 6<sup>th</sup> in five different subjects in a school. The marks given in brackets indicate the maximum marks for a particular subject.

Student /Subject	English (100)	Science (125)	Mathematics (150)	Social Studies (75)	Hindi (50)
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			(75)		
Himanshu	67	84	70	64	90
Prateek	59	72	74	88	84
Keshav	66	90	84	80	76
Maanav	71	66	80	66	86
Suraj	63	76	88	68	72

Find the ratio of total marks obtained by Prateek and Maanav together in Mathematics to the marks obtained by Himanshu in the same subject.

[Question ID = 4392]

- 11:5  
[Option ID = 17565]
- 7:9  
[Option ID = 17566]
- 9:7  
[Option ID = 17567]
- 5:11  
[Option ID = 17568]

Correct Answer :-

- 11:5  
[Option ID = 17565]

22) Study the given table and answer the following question.

Percentage of marks obtained by five students of class 6<sup>th</sup> in five different subjects in a school. The marks given in brackets indicate the maximum marks for a particular subject.

Student /Subject	English (100)	Science (125)	Mathematics (150)	Social Studies (75)	Hindi (50)
Himanshu	67	84	70	64	90
Prateek	59	72	74	88	84
Keshav	66	90	84	80	76
Maanav	71	66	80	66	86
Suraj	63	76	88	68	72

Find out the most scoring subject based on the marks obtained by 5 students.

[Question ID = 4393]

- English  
[Option ID = 17569]
- Hindi  
[Option ID = 17570]
- Mathematics  
[Option ID = 17571]
- Science  
[Option ID = 17572]

Correct Answer :-

- Hindi  
[Option ID = 17570]

23) Describing her relationship to a man in the house, Shalini said, 'He is the brother of the daughter of the wife of my husband'. How is the man related to Shalini?

[Question ID = 4394]

- Son  
[Option ID = 17573]
- Husband  
[Option ID = 17574]
- Nephew  
[Option ID = 17575]
- Brother-in-law  
[Option ID = 17576]

Correct Answer :-

- Son  
[Option ID = 17573]

24) The statement given below is followed by two arguments numbered I and II. You have to analyze the strength of the arguments in relation to the given statement and choose the correct option

Statement: Should interdisciplinarity be an essential component of curriculum in the universities?

Arguments:

- Yes, this allows disciplines to share and thereby enrich each other

II. No, this dilutes the focus of a particular discipline



[Question ID = 4395]

1. If only argument I is strong

[Option ID = 17577]

2. If only argument II is strong

[Option ID = 17578]

3. If neither I nor II is strong

[Option ID = 17579]

4. If both I and II are strong

[Option ID = 17580]

Correct Answer :-

- If only argument I is strong

[Option ID = 17577]

25) The statement given below is followed by two arguments numbered I and II. You have to analyze the strength of the arguments in relation to the given statement and choose the correct option

Statement: Should social media platforms be made liable for the content published or shared on them?

Arguments:

I. Yes, freedom of speech should be exercised only with reasonable restrictions.

II. Yes, since some content may be defamatory or incite violence

[Question ID = 4396]

1. If only argument I is strong

[Option ID = 17581]

2. If only argument II is strong

[Option ID = 17582]

3. If neither I nor II is strong

[Option ID = 17583]

4. If both I and II are strong

[Option ID = 17584]

Correct Answer :-

- If both I and II are strong

[Option ID = 17584]

26) The statement given below is followed by two arguments numbered I and II. You have to analyze the strength of the arguments in relation to the given statement and choose the correct option

Statement: Should all medical graduates passing out of government funded institutions be forced to serve initially for a year in rural area?

Arguments:

I. Yes, this will familiarize them with the lack of proper medical facility in rural region

II. No, this will hamper their professional progress

[Question ID = 4397]

1. If only argument I is strong

[Option ID = 17585]

2. If only argument II is strong

[Option ID = 17586]

3. If neither I nor II is strong

[Option ID = 17587]

4. If both I and II are strong

[Option ID = 17588]

Correct Answer :-

- If neither I nor II is strong

[Option ID = 17587]

27) One question given below is followed by three statements numbered I, II and III. It needs to be decided whether the information given in the statements is sufficient to answer the question.

Question: Among four friends, Pramod, Shankar, Rajeev and Abhishek, who is the youngest?

Statements:

I. Rajeev is younger than Abhishek but older than Pramod and Shankar

II. Abhishek is the oldest

III. Pramod is older than Shankar

Choose the correct option

[Question ID = 4398]

1. Only I

[Option ID = 17589]

2. Only I and II

[Option ID = 17590]

3. Only II and III

[Option ID = 17591]

4. Only I and III

[Option ID = 17592]

Correct Answer :-

- Only I and III

[Option ID = 17592]

28) One question given below is followed by three statements numbered I, II and III. It needs to be decided whether the information given in the statements is

sufficient to answer the question.

Question: Among six men P, T, N D, Q and R, who is the tallest?

Statements:

I. P is taller than D and N, but he is not as tall as T

II. R is taller than Q, but he is not as tall as T

III. The height of Q is less than that of T or R

Choose the correct option

[Question ID = 4399]

1. Only I and II

[Option ID = 17593]

2. Only II and III

[Option ID = 17594]

3. Only I and III

[Option ID = 17595]

4. All I, II and III

[Option ID = 17596]

Correct Answer :-

- Only I and II

[Option ID = 17593]

29) One question given below is followed by three statements numbered I, II and III. It needs to be decided whether the information given in the statements is sufficient to answer the question.

Quesion: Find out the year in which Varun was born?

Statements:

I. Varun is six years older than Subhash

II. Subhash's brother Santosh was born in the year 1998

III. Varun's brother Kishan is two years younger than Santosh who is eight years younger than his own brother.

Choose the correct option

[Question ID = 4400]

1. Only I and II

[Option ID = 17597]

2. Only II and III

[Option ID = 17598]

3. Only I and III

[Option ID = 17599]

4. All I, II and III

[Option ID = 17600]

Correct Answer :-

- All I, II and III

[Option ID = 17600]

30) A cylindrical tank, with circular base area  $10 \text{ m}^2$  and height 10 m, is completely filled with water. A small hole is made at a height 3 m from the base. Water comes out of that hole with a rate of  $1 \text{ m}^3$  /minute. For how much time will water keep coming out of that hole? (Volume of cylinder = circular base area x height)

[Question ID = 4401]

1. 100 minutes

[Option ID = 17601]

2. 80 minutes

[Option ID = 17602]

3. 120 minutes

[Option ID = 17603]

4. 70 minutes

[Option ID = 17604]

Correct Answer :-

- 70 minutes

[Option ID = 17604]

31) Read the passage below and answer the question that follows

A group of children of various ages was read stories in which people caused harm, some of those people doing so intentionally, and some accidentally. When asked about appropriate punishments for those who had caused harm, the younger children, unlike the older ones, assigned punishments that did not vary according to whether the harm was done intentionally or accidentally. Younger children, then, do not regard people's intentions as relevant to punishment.

Which of the following, if true, would most seriously weaken the conclusion above?

[Question ID = 4402]

1. In interpreting these stories, the listeners had to draw on a relatively mature sense of human psychology in order to tell whether harm was produced intentionally or accidentally.

[Option ID = 17605]

2. In these stories, the severity of the harm produced was clearly stated.

[Option ID = 17606]

3. Younger children are as likely to produce harm unintentionally as are older children.

[Option ID = 17607]

4. The older children assigned punishment in a way that closely resembled the way adults had assigned punishment in a similar experiment.

[Option ID = 17608]

Correct Answer :-

- In interpreting these stories, the listeners had to draw on a relatively mature sense of human psychology in order to tell whether harm was produced intentionally or accidentally.

[Option ID = 17605]

32) Read the passage below and answer the question that follows.

Human beings, born with a drive to explore and experiment, thrive on learning. Unfortunately, corporations are oriented predominantly towards controlling employees, not fostering their learning. Ironically, this orientation creates the very conditions that predestine employees to mediocre performances. Over time, superior performance requires superior learning, because long-term corporate survival depends on continually exploring new business and organizational opportunities that can create new sources of growth. To survive in the future, corporations must become "learning organizations,"enterprises that are constantly able to adapt and expand their capabilities. To accomplish this, corporations must change how they view employees. The traditional view that a single charismatic leader should set the corporation's direction and make key decisions is rooted in an individualistic worldview. In an increasingly interdependent world, such a view is no longer viable. In learning organizations, thinking and acting are integrated at all job levels.

Corporate leadership is shared, and leaders become designers, teachers, and stewards, roles requiring new skills: the ability to build shared vision, to reveal and challenge prevailing mental models, and to foster broader, more integrated patterns of thinking. In short, leaders in learning organizations are responsible for building organizations in which employees are continually learning new skills and expanding their capabilities to shape their future.

According to the passage, traditional corporate leaders differ from leaders in learning organizations in that the former

[Question ID = 4403]

1. encourage employees to concentrate on developing a wide range of skills.

[Option ID = 17609]

2. enable employees to recognize and confront dominant corporate models and to develop alternative models.

[Option ID = 17610]

3. make important policy decisions alone and then require employees in the corporation to abide by those decisions.

[Option ID = 17611]

4. instill confidence in employees because of their willingness to make risky decisions and accept their consequences.

[Option ID = 17612]

Correct Answer :-

- make important policy decisions alone and then require employees in the corporation to abide by those decisions.

[Option ID = 17611]

33) Read the passage below and answer the question that follows.

Human beings, born with a drive to explore and experiment, thrive on learning. Unfortunately, corporations are oriented predominantly towards controlling employees, not fostering their learning. Ironically, this orientation creates the very conditions that predestine employees to mediocre performances. Over time, superior performance requires superior learning, because long-term corporate survival depends on continually exploring new business and organizational opportunities that can create new sources of growth. To survive in the future, corporations must become "learning organizations,"enterprises that are constantly able to adapt and expand their capabilities. To accomplish this, corporations must change how they view employees. The traditional view that a single charismatic leader should set the corporation's direction and make key decisions is rooted in an individualistic worldview. In an increasingly interdependent world, such a view is no longer viable. In learning organizations, thinking and acting are integrated at all job levels.

Corporate leadership is shared, and leaders become designers, teachers, and stewards, roles requiring new skills: the ability to build shared vision, to reveal and challenge prevailing mental models, and to foster broader, more integrated patterns of thinking. In short, leaders in learning organizations are responsible for building organizations in which employees are continually learning new skills and expanding their capabilities to shape their future.

Which of the following best describes employee behavior encouraged within learning organizations, as such organizations are described in the passage?

[Question ID = 4404]

1. Carefully defining one's job description and taking care to avoid deviations from it.

[Option ID = 17613]

2. Designing mentoring programs that train new employees to follow procedures that have been used for many years.

[Option ID = 17614]

3. Concentrating one's efforts on mastering one aspect of a complicated task.

[Option ID = 17615]

4. Analyzing a problem related to productivity, making a decision about a solution, and implementing that solution.

[Option ID = 17616]

Correct Answer :-

- Analyzing a problem related to productivity, making a decision about a solution, and implementing that solution.

[Option ID = 17616]

34) Read the passage below and answer the question that follows.

Human beings, born with a drive to explore and experiment, thrive on learning. Unfortunately, corporations are oriented predominantly towards controlling employees, not fostering their learning. Ironically, this orientation creates the very conditions that predestine employees to mediocre performances. Over time, superior performance requires superior learning, because long-term corporate survival depends on continually exploring new business and organizational opportunities that can create new sources of growth. To survive in the future, corporations must become "learning organizations,"enterprises that are constantly able to adapt and expand their capabilities. To accomplish this,corporations must change how they view employees. The traditional view that a single charismatic leader should set the corporation's direction and make key decisions is rooted in an individualistic worldview. In an increasingly interdependent world, such a view is no longer viable. In learning organizations, thinking and acting are integrated at all job levels.

Corporate leadership is shared, and leaders become designers, teachers, and stewards, roles requiring new skills: the ability to build shared vision, to reveal and challenge prevailing mental models, and to foster broader, more integrated patterns of thinking. In short, leaders in learning organizations are responsible for building organizations in which employees are continually learning new skills and expanding their capabilities to shape their future.

According to the author of the passage, corporate leaders of the future should do which of the following?

[Question ID = 4405]

1. They should encourage employees to put long-term goals ahead of short-term profits.

[Option ID = 17617]

2. They should exercise more control over employees in order to constrain production costs.

[Option ID = 17618]

3. They should redefine incentives for employees' performance improvement.

[Option ID = 17619]

4. They should provide employees with opportunities to gain new skills and expand their capabilities.

[Option ID = 17620]

Correct Answer :-

- They should provide employees with opportunities to gain new skills and expand their capabilities.

[Option ID = 17620]

35) Read the passage below and answer the question that follows.

Human beings, born with a drive to explore and experiment, thrive on learning. Unfortunately, corporations are oriented predominantly towards controlling employees, not fostering their learning. Ironically, this orientation creates the very conditions that predestine employees to mediocre performances. Over time,

superior performance requires superior learning, because long-term corporate survival depends on continually exploring new business and organizational opportunities that can create new sources of growth. To survive in the future, corporations must become "learning organizations,"enterprises that are constantly able to adapt and expand their capabilities. To accomplish this, corporations must change how they view employees. The traditional view that a single charismatic leader should set the corporation's direction and make key decisions is rooted in an individualistic worldview. In an increasingly interdependent world, such a view is no longer viable. In learning organizations, thinking and acting are integrated at all job levels.

Corporate leadership is shared, and leaders become designers, teachers, and stewards, roles requiring new skills: the ability to build shared vision, to reveal and challenge prevailing mental models, and to foster broader, more integrated patterns of thinking. In short, leaders in learning organizations are responsible for building organizations in which employees are continually learning new skills and expanding their capabilities to shape their future.

The primary purpose of the passage is to

[Question ID = 4406]

1. Propose an alternative to a common corporate approach.  
[Option ID = 17621]
2. Introduce a new approach to corporate leadership and evaluate criticisms of it.  
[Option ID = 17622]
3. Explain competing theories about management practices and reconcile them.  
[Option ID = 17623]
4. Contrast two typical corporate organizational structures.  
[Option ID = 17624]

Correct Answer :-

- Propose an alternative to a common corporate approach.  
[Option ID = 17621]

36) Read the passage below and answer the question that follows.

Neither a rising standard of living nor balanced trade, by itself, establishes a country's ability to compete in the international marketplace. Both are required simultaneously since standards of living can rise because of growing trade deficits and trade can be balanced by means of a decline in a country's standard of living.

If the facts stated in the passage above are true, a proper test of a country's ability to be competitive is its ability to

[Question ID = 4407]

1. balance its trade while its standard of living rises.  
[Option ID = 17625]
2. balance its trade while its standard of living falls.  
[Option ID = 17626]
3. increase trade deficits while its standard of living rises.  
[Option ID = 17627]
4. decrease trade deficits while its standard of living falls.  
[Option ID = 17628]

Correct Answer :-

- balance its trade while its standard of living rises.  
[Option ID = 17625]

37) Read the passage below and answer the question that follows.

Some bat caves, like honeybee hives, have residents that take on different duties such as defending the entrance, ACTING AS SENTINELS AND TO SOUND a warning at the approach of danger, and scouting outside the cave for new food and roosting sites.

Choose the most appropriate for the underlined words :

[Question ID = 4408]

1. acting as sentinels and to sound  
[Option ID = 17629]
2. acting as sentinels and sounding  
[Option ID = 17630]
3. to act as sentinels and sound  
[Option ID = 17631]
4. to act as sentinels and to sound  
[Option ID = 17632]

Correct Answer :-

- acting as sentinels and sounding  
[Option ID = 17630]

38) Choose the odd one out of the following:

[Question ID = 4409]

1. Flawed  
[Option ID = 17633]
2. Contrived  
[Option ID = 17634]
3. Strained  
[Option ID = 17635]
4. Forced  
[Option ID = 17636]

Correct Answer :-

- Flawed  
[Option ID = 17633]

39) What is the meaning of "AMIABLE"?

Choose the correct option

[Question ID = 4410]

1. pleasant but moody; good-natured but lazy  
[Option ID = 17637]

2. slowly and interestingly; not fast and complex  
[Option ID = 17638]
3. pleasant and friendly; good-natured and likeable  
[Option ID = 17639]
4. shameless but friendly; not good-natured by likeable.  
[Option ID = 17640]

**Correct Answer :-**

- pleasant and friendly; good-natured and likeable

[Option ID = 17639]

**40) Read the sentence below and answer the question that follows.**

A Labor Department study states that the NUMBERS OF WOMEN EMPLOYED OUTSIDE THE HOME GREW BY MORE THAN A THIRTY-FIVE PERCENT INCREASE in the past decade and accounted for more than sixty-two percent of the total growth in the civilian workforce.

**Choose the most grammatically correct option**

**[Question ID = 4411]**

1. numbers of women employed outside the home grew by more than a thirty-five percent increase

[Option ID = 17641]

2. numbers of women employed outside the home grew more than thirty-five percent

[Option ID = 17642]

3. numbers of women employed outside the home were raised by more than thirty-five percent

[Option ID = 17643]

4. number of women employed outside the home increased by more than thirty-five percent

[Option ID = 17644]

**Correct Answer :-**

- number of women employed outside the home increased by more than thirty-five percent

[Option ID = 17644]

**41) Choose the option which is synonymous with the word in double-quotes in the sentence: The RBI announced a host of new measures to revitalize the "moribund" municipal bonds market.**

**[Question ID = 4412]**

1. Illiquid

[Option ID = 17645]

2. Complicated

[Option ID = 17646]

3. Corrupt

[Option ID = 17647]

4. Dying

[Option ID = 17648]

**Correct Answer :-**

- Dying

[Option ID = 17648]

**42) Choose the grammatically correct option:**

**[Question ID = 4413]**

1. He considers to be an impertinence for the journalist who knows nothing about art to criticize the artist and his work.

[Option ID = 17649]

2. He considers to be an impertinence for the journalist which knows nothing about art to criticize the artist and his work.

[Option ID = 17650]

3. He considers it to be an impertinence for the journalist who knows nothing about art to criticize the artist and his work.

[Option ID = 17651]

4. He considers it to be an impertinence for the journalist that knows nothing about art to criticize the artist and his work.

[Option ID = 17652]

**Correct Answer :-**

- He considers it to be an impertinence for the journalist who knows nothing about art to criticize the artist and his work.

[Option ID = 17651]

**43) Identify the odd one.**

**[Question ID = 4414]**

1. Flow

[Option ID = 17653]

2. Trap

[Option ID = 17654]

3. Draw

[Option ID = 17655]

4. Back

[Option ID = 17656]

**Correct Answer :-**

- Back

[Option ID = 17656]

**44) Read the passage below and answer the question that follows.**

One day in my car when I was a little slow in making a getaway at the green light while our patient fellow-citizens immediately began honking furiously behind me, I suddenly remembered another occasion set in similar circumstances. A motorcycle ridden by a skinny little man wearing spectacles had gone around me and planted itself in front of me at the red light. As he came to a stop the little man had stalled his motor and was vainly striving to revive it. When the light changed, I asked him with my usual courtesy to take his motorcycle out of the way so that I might pass. I suppose the little man was getting a little irritable over his wheezy motor. Hence he replied according to the rules of Parisian courtesy, that I could go and climb a tree. I insisted, still polite but with a slight shade of impatience in my voice. I was immediately told in no uncertain terms that I could go to hell. Meanwhile several horns had begun honking noisily behind me. With great firmness I

begged my interlocutor to be polite and realize that he was blocking the traffic. The irascible character, probably exasperated by the now-evident ill-temper of his motor, informed me that if I wanted what he called a thorough dusting-off he would gladly give it to me. Such cynicism filled me with a healthy rage and I got out of my car with the intention of teaching a good lesson to this foul-mouthed individual. I was at least a head taller than my adversary and my muscles have always been sound. I still believe the dusting-off would have been received rather than given. But no sooner had I set foot on the pavement than from among the gathering crowd a man stepped forth, rushed at me, informed me that I was the scum of the earth and that he would not allow me to strike a man who had a motorcycle between his legs and hence was at a disadvantage.

Arnold BROWN, "The Age of Osiris", The Futurist There is an obvious note of sarcasm in the statement, "Our patient fellow-citizens immediately began honking furiously." The narrator means that

[Question ID = 4415]

1. these people piling up behind him enjoyed honking furiously.  
[Option ID = 17657]
2. they should -- and could -- have been a bit more patient.  
[Option ID = 17658]
3. they were in a hurry because a patient fellow-citizen was being taken to a hospital.  
[Option ID = 17659]
4. these people knew their citizens' rights quite well.  
[Option ID = 17660]

Correct Answer :-

- they should -- and could -- have been a bit more patient.
- [Option ID = 17658]

45) Read the passage below and answer the question that follows.

One day in my car when I was a little slow in making a getaway at the green light while our patient fellow-citizens immediately began honking furiously behind me, I suddenly remembered another occasion set in similar circumstances. A motorcycle ridden by a skinny little man wearing spectacles had gone around me and planted itself in front of me at the red light. As he came to a stop the little man had stalled his motor and was vainly striving to revive it. When the light changed, I asked him with my usual courtesy to take his motorcycle out of the way so that I might pass. I suppose the little man was getting a little irritable over his wheezy motor. Hence he replied according to the rules of Parisian courtesy, that I could go and climb a tree. I insisted, still polite but with a slight shade of impatience in my voice. I was immediately told in no uncertain terms that I could go to hell. Meanwhile several horns had begun honking noisily behind me. With great firmness I begged my interlocutor to be polite and realize that he was blocking the traffic. The irascible character, probably exasperated by the now-evident ill-temper of his motor, informed me that if I wanted what he called a thorough dusting-off he would gladly give it to me. Such cynicism filled me with a healthy rage and I got out of my car with the intention of teaching a good lesson to this foul-mouthed individual. I was at least a head taller than my adversary and my muscles have always been sound. I still believe the dusting-off would have been received rather than given. But no sooner had I set foot on the pavement than from among the gathering crowd a man stepped forth, rushed at me, informed me that I was the scum of the earth and that he would not allow me to strike a man who had a motorcycle between his legs and hence was at a disadvantage.

Arnold BROWN, "The Age of Osiris", *The Futurist*

The narrator thinks that the little man

[Question ID = 4416]

1. must have been having trouble with his motorcycle quite frequently.  
[Option ID = 17661]
2. knew the rules of Parisian courtesy quite well.  
[Option ID = 17662]
3. should really have bought himself a brand new motorcycle.  
[Option ID = 17663]
4. was doing it all on purpose.  
[Option ID = 17664]

Correct Answer :-

- must have been having trouble with his motorcycle quite frequently.
- [Option ID = 17661]

46) Read the passage below and answer the question that follows.

One day in my car when I was a little slow in making a getaway at the green light while our patient fellow-citizens immediately began honking furiously behind me, I suddenly remembered another occasion set in similar circumstances. A motorcycle ridden by a skinny little man wearing spectacles had gone around me and planted itself in front of me at the red light. As he came to a stop the little man had stalled his motor and was vainly striving to revive it. When the light changed, I asked him with my usual courtesy to take his motorcycle out of the way so that I might pass. I suppose the little man was getting a little irritable over his wheezy motor. Hence he replied according to the rules of Parisian courtesy, that I could go and climb a tree. I insisted, still polite but with a slight shade of impatience in my voice. I was immediately told in no uncertain terms that I could go to hell. Meanwhile several horns had begun honking noisily behind me. With great firmness I begged my interlocutor to be polite and realize that he was blocking the traffic. The irascible character, probably exasperated by the now-evident ill-temper of his motor, informed me that if I wanted what he called a thorough dusting-off he would gladly give it to me. Such cynicism filled me with a healthy rage and I got out of my car with the intention of teaching a good lesson to this foul-mouthed individual. I was at least a head taller than my adversary and my muscles have always been sound. I still believe the dusting-off would have been received rather than given. But no sooner had I set foot on the pavement than from among the gathering crowd a man stepped forth, rushed at me, informed me that I was the scum of the earth and that he would not allow me to strike a man who had a motorcycle between his legs and hence was at a disadvantage.

Arnold BROWN, "The Age of Osiris", *The Futurist*

As he got out of his car, the narrator was intending to

[Question ID = 4417]

1. throw the motorcycle out of the way.  
[Option ID = 17665]
2. honk back at the people.  
[Option ID = 17666]
3. beat up the little man.  
[Option ID = 17667]
4. beg the little man to be a little bit more polite.  
[Option ID = 17668]

Correct Answer :-

- beat up the little man.
- [Option ID = 17667]

47) Read the passage below and answer the question that follows.

One day in my car when I was a little slow in making a getaway at the green light while our patient fellow-citizens immediately began honking furiously behind me,

I suddenly remembered another occasion set in similar circumstances. A motorcycle ridden by a skinny little man wearing spectacles had gone around me and planted itself in front of me at the red light. As he came to a stop the little man had stalled his motor and was vainly striving to revive it. When the light changed, I asked him with my usual courtesy to take his motorcycle out of the way so that I might pass. I suppose the little man was getting a little irritable over his wheezy motor. Hence he replied according to the rules of Parisian courtesy, that I could go and climb a tree. I insisted, still polite but with a slight shade of impatience in my voice. I was immediately told in no uncertain terms that I could go to hell. Meanwhile several horns had begun honking noisily behind me. With great firmness I begged my interlocutor to be polite and realize that he was blocking the traffic. The irascible character, probably exasperated by the now-evident ill-temper of his motor, informed me that if I wanted what he called a thorough dusting-off he would gladly give it to me. Such cynicism filled me with a healthy rage and I got out of my car with the intention of teaching a good lesson to this foul-mouthed individual. I was at least a head taller than my adversary and my muscles have always been sound. I still believe the dusting-off would have been received rather than given. But no sooner had I set foot on the pavement than from among the gathering crowd a man stepped forth, rushed at me, informed me that I was the scum of the earth and that he would not allow me to strike a man who had a motorcycle between his legs and hence was at a disadvantage.

Arnold BROWN, "The Age of Osiris", The Futurist

The narrator had not expected that the

[Question ID = 4418]

1. lights would change to green so soon.

[Option ID = 17669]

2. little man would put up a fight.

[Option ID = 17670]

3. little man could be so tranquil.

[Option ID = 17671]

4. bystanders would take sides with the little man.

[Option ID = 17672]

Correct Answer :-

- bystanders would take sides with the little man.

[Option ID = 17672]

48) Read the passage below and answer the question that follows.

One day in my car when I was a little slow in making a getaway at the green light while our patient fellow-citizens immediately began honking furiously behind me, I suddenly remembered another occasion set in similar circumstances. A motorcycle ridden by a skinny little man wearing spectacles had gone around me and planted itself in front of me at the red light. As he came to a stop the little man had stalled his motor and was vainly striving to revive it. When the light changed, I asked him with my usual courtesy to take his motorcycle out of the way so that I might pass. I suppose the little man was getting a little irritable over his wheezy motor. Hence he replied according to the rules of Parisian courtesy, that I could go and climb a tree. I insisted, still polite but with a slight shade of impatience in my voice. I was immediately told in no uncertain terms that I could go to hell. Meanwhile several horns had begun honking noisily behind me. With great firmness I begged my interlocutor to be polite and realize that he was blocking the traffic. The irascible character, probably exasperated by the now-evident ill-temper of his motor, informed me that if I wanted what he called a thorough dusting-off he would gladly give it to me. Such cynicism filled me with a healthy rage and I got out of my car with the intention of teaching a good lesson to this foul-mouthed individual. I was at least a head taller than my adversary and my muscles have always been sound. I still believe the dusting-off would have been received rather than given. But no sooner had I set foot on the pavement than from among the gathering crowd a man stepped forth, rushed at me, informed me that I was the scum of the earth and that he would not allow me to strike a man who had a motorcycle between his legs and hence was at a disadvantage.

Arnold BROWN, "The Age of Osiris", The Futurist

The proposed "dusting-off" did not take place one way or the other, because

[Question ID = 4419]

1. somebody from among the crowd told the narrator that he was the scum of the earth.

[Option ID = 17673]

2. the little man refused to have a fight with him.

[Option ID = 17674]

3. the narrator was emotionally incapable of manhandling a little man; his compassionate feelings would not allow his to do such a thing.

[Option ID = 17675]

4. the narrator was prevented from fighting by somebody from among the crowd.

[Option ID = 17676]

Correct Answer :-

- the narrator was prevented from fighting by somebody from among the crowd.

[Option ID = 17676]

49) Choose the word most nearly opposite in meaning to the word CONFEDERATE.

[Question ID = 4420]

1. Enemy

[Option ID = 17677]

2. Confuse

[Option ID = 17678]

3. Wander

[Option ID = 17679]

4. Cluster

[Option ID = 17680]

Correct Answer :-

- Enemy

[Option ID = 17677]

50) Fill in the blank with the most suitable option.

The pensioner had to \_\_\_\_\_ for his measly income.

[Question ID = 4421]

1. Run to Tom, Dick and Harry

[Option ID = 17681]

2. Run in cold sweat

[Option ID = 17682]

3. Run from pillar to post

[Option ID = 17683]

4. Choose between the devil and sea

[Option ID = 17684]

Correct Answer :-

- Run from pillar to post

[Option ID = 17683]

51) In this question, there is exactly one correctly spelt word. Identify that word from the given options.

i. Bouquete

ii. Boquet

iii. Bouquet

iv. Bouquette

[Question ID = 4422]

1. i

[Option ID = 17685]

2. ii

[Option ID = 17686]

3. iii

[Option ID = 17687]

4. iv

[Option ID = 17688]

Correct Answer :-

- iii

[Option ID = 17687]

52) In this question a part of the sentence that requires an improvement is underlined. Choose the best option. Choose "No improvement" if no improvement is needed.

My friend lives in a nearby street whose name I have forgotten.

[Question ID = 4423]

1. the name of which

[Option ID = 17689]

2. which name

[Option ID = 17690]

3. of which name

[Option ID = 17691]

4. No improvement

[Option ID = 17692]

Correct Answer :-

- the name of which

[Option ID = 17689]

53) Choose the word that is a synonym of 'fastidious'

[Question ID = 4424]

1. difficult

[Option ID = 17693]

2. meticulous

[Option ID = 17694]

3. fashionable

[Option ID = 17695]

4. speedy

[Option ID = 17696]

Correct Answer :-

- meticulous

[Option ID = 17694]

54) From among the four choices given, choose the word that has the correct spelling

[Question ID = 4425]

1. malvolence

[Option ID = 17697]

2. malevolence

[Option ID = 17698]

3. maleviolence

[Option ID = 17699]

4. malevolnce

[Option ID = 17700]

Correct Answer :-

- malevolence

[Option ID = 17698]

55) From among the four options given, choose the phrase that does not explain the word 'Cacophony'

[Question ID = 4426]

1. a harsh and jarring noise

[Option ID = 17701]

2. a chaotic mixture

[Option ID = 17702]

3. a wedding procession

[Option ID = 17703]

4. definitely a symphony

[Option ID = 17704]

Correct Answer :-

- a wedding procession

[Option ID = 17703]

**56) Arjuna award in India is given to**

[Question ID = 4427]

1. brave soldiers of the armed forces

[Option ID = 17705]

2. outstanding sports persons

[Option ID = 17706]

3. celebrated authors

[Option ID = 17707]

4. best film makers

[Option ID = 17708]

Correct Answer :-

- outstanding sports persons

[Option ID = 17706]

**57) How many persons of Indian origin have received the Nobel prize in economics?**

[Question ID = 4428]

1. 4

[Option ID = 17709]

2. 2

[Option ID = 17710]

3. 1

[Option ID = 17711]

4. 5

[Option ID = 17712]

Correct Answer :-

- 2

[Option ID = 17710]

**58) G-7 is a group of**

[Question ID = 4429]

1. the world's seven advanced democratic countries

[Option ID = 17713]

2. the world's seven largest economies

[Option ID = 17714]

3. the seven European and North American countries.

[Option ID = 17715]

4. a group of seven countries having a free trade pact among themselves

[Option ID = 17716]

Correct Answer :-

- the world's seven advanced democratic countries

[Option ID = 17713]

**59) Kavaratti is the capital of**

[Question ID = 4430]

1. Mizoram

[Option ID = 17717]

2. Dadra and Nagar Haveli and Daman and Diu

[Option ID = 17718]

3. Andaman and Nicobar

[Option ID = 17719]

4. Lakshadweep

[Option ID = 17720]

Correct Answer :-

- Lakshadweep

[Option ID = 17720]

**60) Costa Rica is**

[Question ID = 4431]

1. a country in Central America

[Option ID = 17721]

2. an East European country

[Option ID = 17722]

3. a form of dance performed in Latin America

[Option ID = 17723]

4. an island in the Pacific in USA jurisdiction

[Option ID = 17724]

Correct Answer :-

- a country in Central America

[Option ID = 17721]

**61) Electoral bond is**

[Question ID = 4432]

1. A financial instrument for making political donations

- [Option ID = 17725]
2. A bond submitted by a candidate to the election commission before filing nomination
- [Option ID = 17726]
3. A bond furnished by a candidate for observing code of conduct set by the election commission
- [Option ID = 17727]
4. None of these choices
- [Option ID = 17728]

**Correct Answer :-**

- A financial instrument for making political donations

[Option ID = 17725]

**62) “Current account deficit” is a term used in the context of:**

**[Question ID = 4433]**

1. Bank account
- [Option ID = 17729]
2. Fiscal deficit
- [Option ID = 17730]
3. Balance of payments
- [Option ID = 17731]
4. None of these choices
- [Option ID = 17732]

**Correct Answer :-**

- Balance of payments

[Option ID = 17731]

**63) Who prepares the National income estimates in India?**

**[Question ID = 4434]**

1. Niti Aayog
- [Option ID = 17733]
2. Reserve Bank of India
- [Option ID = 17734]
3. Central Statistical Organization
- [Option ID = 17735]
4. Indian Statistical Institute
- [Option ID = 17736]

**Correct Answer :-**

- Central Statistical Organization

[Option ID = 17735]

**64) CMIE is a nomenclature for:**

**[Question ID = 4435]**

1. Centre for monitoring invasion and espionage
- [Option ID = 17737]
2. Centre for monitoring Indian Economy
- [Option ID = 17738]
3. Centre for managing Import and Export
- [Option ID = 17739]
4. Centre for monitoring investment and E commerce
- [Option ID = 17740]

**Correct Answer :-**

- Centre for monitoring Indian Economy

[Option ID = 17738]

**65) Bitcoin is a:**

**[Question ID = 4436]**

1. Digital currency
- [Option ID = 17741]
2. Currency mined only in USA
- [Option ID = 17742]
3. A coin used for toss in Britain in cricket match
- [Option ID = 17743]
4. First coin minted in Britain
- [Option ID = 17744]

**Correct Answer :-**

- Digital currency

[Option ID = 17741]

**66) Suppose that each of three men at a party throws his hat into the center of the room. The hats are first mixed up and then each man randomly selects a hat. What is the probability that none of the three men select their own hat?**

**[Question ID = 4437]**

1.  $\frac{1}{3}$
- [Option ID = 17745]
2.  $\frac{2}{3}$
- [Option ID = 17746]
3.  $\frac{1}{2}$

[Option ID = 17747]

4.  $\frac{3}{4}$

[Option ID = 17748]

Correct Answer :-

•  $\frac{1}{3}$

[Option ID = 17745]

67) In how many ways can a student, choose a program of five courses, if nine courses are available and two specific courses are compulsory for every student?

[Question ID = 4438]

1. 34

[Option ID = 17749]

2. 36

[Option ID = 17750]

3. 35

[Option ID = 17751]

4. 37

[Option ID = 17752]

Correct Answer :-

• 35

[Option ID = 17751]

68) The orthocenter of a triangle with vertices (0, 0), (3, 4), and (4, 0) is

[Question ID = 4439]

1. (3,5/4)

[Option ID = 17753]

2. (3,12)

[Option ID = 17754]

3. (3,3/4)

[Option ID = 17755]

4. (3,9)

[Option ID = 17756]

Correct Answer :-

• (3,3/4)

[Option ID = 17755]

69) If Z is a complex number, then the minimum value of  $|Z| + |Z-1|$  is

[Question ID = 4440]

1. 1

[Option ID = 17757]

2. 0

[Option ID = 17758]

3. 1/2

[Option ID = 17759]

4. None of the options

[Option ID = 17760]

Correct Answer :-

• 1

[Option ID = 17757]

70) The multiplicative inverse of  $4-3i$  is

[Question ID = 4441]

1.  $-\frac{4}{25} - \frac{3i}{25}$

[Option ID = 17761]

2.  $\frac{4}{25} + \frac{3i}{25}$

[Option ID = 17762]

3.  $\frac{4}{16} + \frac{3i}{25}$

[Option ID = 17763]

4. None of the options

[Option ID = 17764]

Correct Answer :-

•  $\frac{4}{25} + \frac{3i}{25}$

[Option ID = 17762]

71) If A is a skew-symmetric matrix of order 3, then matrix  $A^3$  is [Question ID = 4442]

1. skew-symmetric matrix [Option ID = 17765]

2. symmetric matrix [Option ID = 17766]

3. diagonal matrix [Option ID = 17767]

4. None of the options [Option ID = 17768]

Correct Answer :-

• skew-symmetric matrix [Option ID = 17765]

72) The  $2x^3 - 6x + 5$  is an increasing function, if

[Question ID = 4443]

1.  $0 < x < 1$   
[Option ID = 17769]
2.  $-1 < x < 1$   
[Option ID = 17770]
3.  $x < -1$  or  $x > 1$   
[Option ID = 17771]
4.  $-1 < x < \frac{-1}{2}$   
[Option ID = 17772]

Correct Answer :-

- $x < -1$  or  $x > 1$

[Option ID = 17771]

73) A minimum value of  $\int_0^x te^{-t^2} dt$  is

[Question ID = 4444]

1. 2  
[Option ID = 17773]
2. 1  
[Option ID = 17774]
3. 3  
[Option ID = 17775]
4. 0  
[Option ID = 17776]

Correct Answer :-

- 0

[Option ID = 17776]

74) The value of the expression

$$\frac{(a-1) - \frac{(a-1)^2}{2} + \frac{(a-1)^3}{3} - \dots}{(b-1) - \frac{(b-1)^2}{2} + \frac{(b-1)^3}{3} - \dots}$$

is

[Question ID = 4445]

1.  $\log_a b$   
[Option ID = 17777]
2.  $\log_b a$   
[Option ID = 17778]
3.  $\log_a(b-1)$   
[Option ID = 17779]
4.  $\log_{(a-1)} b$   
[Option ID = 17780]

Correct Answer :-

- $\log_b a$

[Option ID = 17778]

75)

The value of  $a$  for which the difference between the roots of the equation  $x^2 + ax + 8 = 0$  is 2 are

[Question ID = 4446]

1.  $\pm 2$   
[Option ID = 17781]
2.  $\pm 4$   
[Option ID = 17782]
3.  $\pm 6$   
[Option ID = 17783]
4.  $\pm 8$   
[Option ID = 17784]

Correct Answer :-

- $\pm 6$

[Option ID = 17783]

76) The inequality  $|2x-3| < 1$  is valid when  $x$  lies in the interval

[Question ID = 4447]

1. (3,4)  
[Option ID = 17785]
2. (1,2)  
[Option ID = 17786]
3. (-1,2)  
[Option ID = 17787]
4. (-4,3)  
[Option ID = 17788]

Correct Answer :-

- (1,2)

[Option ID = 17786]

77) The maximum and minimum values of,  $\frac{x^2 + 14x + 9}{x^2 + 2x + 3}$ ,  $x \in R$  are

[Question ID = 4448]

1. 3, 1  
[Option ID = 17789]
2. 4, - 5  
[Option ID = 17790]
3. 0,  $-\infty$   
[Option ID = 17791]
4.  $\infty$ ,  $-\infty$   
[Option ID = 17792]

Correct Answer :-

- 4, - 5  
[Option ID = 17790]

78) If the ratio of HM and GM of two quantities is 12:13, then the ratio of the numbers is

[Question ID = 4449]

1. 1:2  
[Option ID = 17793]
2. 2:3  
[Option ID = 17794]
3. 3:4  
[Option ID = 17795]
4. None of the options  
[Option ID = 17796]

Correct Answer :-

- None of the options  
[Option ID = 17796]

79) The salaries of A, B, C are in the ratio 2:3:5. If the increments of 15%, 10%, and 20% are allowed respectively in their salaries, then what will be the new ratio of their salaries?

[Question ID = 4450]

1. 3:3:10  
[Option ID = 17797]
2. 10:11:20  
[Option ID = 17798]
3. 23:33:60  
[Option ID = 17799]
4. cannot be determined  
[Option ID = 17800]

Correct Answer :-

- 23:33:60  
[Option ID = 17799]

80) A car travels the first one-third of a certain distance with a speed of 10 km/hr, the next one-third distance with a speed of 20 km/hr, and the last one-third distance with a speed of 60 km/hr. The average speed of the car for the whole journey is:

[Question ID = 4451]

1. 18 km/hr  
[Option ID = 17801]
2. 24 km/hr  
[Option ID = 17802]
3. 30 km/hr  
[Option ID = 17803]
4. 36 km/hr  
[Option ID = 17804]

Correct Answer :-

- 18 km/hr  
[Option ID = 17801]

81) If  $f(x+1) = x^2 - 3x + 2$ , then what is  $f(x)$  equal to?

[Question ID = 4452]

1.  $x^2 - 5x + 4$   
[Option ID = 17805]
2.  $x^2 - 5x + 6$   
[Option ID = 17806]
3.  $x^2 + 3x + 3$   
[Option ID = 17807]
4.  $x^2 - 3x + 1$   
[Option ID = 17808]

Correct Answer :-

- $x^2 - 5x + 6$   
[Option ID = 17806]

82) If a, b, c, d are in continued proportion, then  $\frac{(a-b)^{-3}}{(b-c)^{-3}}$  is equal to

[Question ID = 4453]

1.  $\frac{c}{a}$

[Option ID = 17809]

2.  $\frac{d}{b}$

[Option ID = 17810]

3.  $\frac{b}{c}$

[Option ID = 17811]

4.  $\frac{d}{a}$

[Option ID = 17812]

Correct Answer :-

•  $\frac{d}{a}$

[Option ID = 17812]

83) A hollow uniform metallic sphere has an internal diameter of 1 meter. The metal has a thickness of 1 cm. It is melted to produce a cylindrical rod of diameter 2 cm. What is the approximate length of the cylindrical rod?[Question ID = 4454]

1. 74 meter [Option ID = 17813]

2. 86 meter [Option ID = 17814]

3. 92 meter [Option ID = 17815]

4. 102 meter [Option ID = 17816]

Correct Answer :-

• 102 meter [Option ID = 17816]

84) If  $A = \begin{pmatrix} \cos \alpha & -\sin \alpha \\ \sin \alpha & \cos \alpha \end{pmatrix}$  and  $B^T = \begin{pmatrix} \cos \beta & \sin \beta \\ k & \cos \beta \end{pmatrix}$  and  $AB = BA$ , then  $k$  is equal to

[Question ID = 4455]

1.  $\cos \beta$

[Option ID = 17817]

2.  $-\cos \beta$

[Option ID = 17818]

3.  $\sin \beta$

[Option ID = 17819]

4.  $-\sin \beta$

[Option ID = 17820]

Correct Answer :-

•  $-\sin \beta$

[Option ID = 17820]

85)

If for  $x < -1$ ,  $f(x) = ax^3 + bx - c$  and for  $x \geq -1$ ,  $f(x) = bx^2 - d$ , what is the value of  $a, b, c, d$  for which  $f(x)$  is differentiable everywhere?

[Question ID = 4456]

1.  $a = 3(d - c)$ ,  $b = 2(d - c)$ ,  $c = c$ ,  $d = d$

[Option ID = 17821]

2.  $a = 2(d - c)$ ,  $b = 3(d - c)$ ,  $c = c$ ,  $d = d$

[Option ID = 17822]

3.  $a = 3(c - d)$ ,  $b = 2(c - d)$ ,  $c = c$ ,  $d = d$

[Option ID = 17823]

4.  $a = 2(c - d)$ ,  $b = 3(c - d)$ ,  $c = -4$ ,  $d = 2$

[Option ID = 17824]

Correct Answer :-

•  $a = 3(d - c)$ ,  $b = 2(d - c)$ ,  $c = c$ ,  $d = d$

[Option ID = 17821]

86)  $\lim_{x \rightarrow 0} \{\tan(\frac{\pi}{4} + x)\}^{1/x}$  is equal to

[Question ID = 4457]

1.  $e$

[Option ID = 17825]

2.  $e^2$

[Option ID = 17826]

3.  $1/e$

[Option ID = 17827]

4.  $1/e^2$

[Option ID = 17828]

Correct Answer :-

•  $e^2$

[Option ID = 17826]

87)

If  $f(x) = \log_x(\log x^a)$ , then  $f'(e) = ?$

[Question ID = 4458]

1.  $\frac{1 - \log a}{e}$

- [Option ID = 17829]
2.  $\frac{1}{e^2}$
- [Option ID = 17830]
3.  $e^2$
- [Option ID = 17831]
4.  $\frac{e^2}{1 - \log a}$
- [Option ID = 17832]

Correct Answer :-

- $\frac{1 - \log a}{e}$

[Option ID = 17829]

88) If the maximum value of the function  $f(x) = \frac{\log x}{5x}$  lies in the interval  $[a, b]$ , then which of the following is true?

[Question ID = 4459]

1.  $a = -1, b = 0$
- [Option ID = 17833]
2.  $a = 0, b = 1$
- [Option ID = 17834]
3.  $a = 1, b = e$
- [Option ID = 17835]
4.  $a = e, b = \infty$
- [Option ID = 17836]

Correct Answer :-

- $a = 0, b = 1$

[Option ID = 17834]

89)

If  $f(x) = \begin{cases} e^{-|x|} & \text{for } |x| \geq 1 \\ |x| - 1 + \frac{1}{e} & \text{for } |x| < 1 \end{cases}$  then what is the area bounded by  $f(x)$  and the x-axis.

[Question ID = 4460]

1. **1**
- [Option ID = 17837]
2.  $1/e^2$
- [Option ID = 17838]
3.  $1 + \frac{2}{e^2}$
- [Option ID = 17839]
4.  $1 - \frac{2}{e^2}$
- [Option ID = 17840]

Correct Answer :-

- $1 + \frac{2}{e^2}$

[Option ID = 17839]

90)

If  $\frac{dy}{dx} - y \tan x - x e^x \sec x = 0$ ,  $y(0) = 0$  then  $\int_0^1 y \cos x \, dx = ?$

[Question ID = 4461]

1. 1
- [Option ID = 17841]
2. e
- [Option ID = 17842]
3.  $(1 + e)$
- [Option ID = 17843]
4.  $3 - e$
- [Option ID = 17844]

Correct Answer :-

- $3 - e$

[Option ID = 17844]

91)

If A is a square matrix of order 3 with  $|A| = 4$  then value of  $|-2A|$  is :

[Question ID = 4462]

1. 32
- [Option ID = 17845]
2. -32
- [Option ID = 17846]
3. 8
- [Option ID = 17847]
4. -8
- [Option ID = 17848]

Correct Answer :-

- -32

[Option ID = 17846]

92)

Let  $A = \{2, 3, 5, 6, 7, 8, 11, 12, 13\}$  and  $B = \{2, 3, 6, 8\}$ . Then

[Question ID = 4463]

1.  $A \cup B = A$   
[Option ID = 17849]
2.  $A \cap B = A$   
[Option ID = 17850]
3.  $A \cup B = B$   
[Option ID = 17851]
4. None of the above  
[Option ID = 17852]

Correct Answer :-

- $A \cup B = A$   
[Option ID = 17849]

93) How many odd numbers exist between 1 and 120 which are neither divisible by 5 nor by 7?

[Question ID = 4464]

1. 37  
[Option ID = 17853]
2. 41  
[Option ID = 17854]
3. 43  
[Option ID = 17855]
4. 45  
[Option ID = 17856]

Correct Answer :-

- 41  
[Option ID = 17854]

94) Solution of the differential equation  $x \frac{dy}{dx} = 16y$  is

[Question ID = 4465]

1.  $y = Cx^{16}$   
[Option ID = 17857]
2.  $y = Cx + 16$   
[Option ID = 17858]
3.  $y = 16x$   
[Option ID = 17859]
4.  $y = Cx - 16$   
[Option ID = 17860]

Correct Answer :-

- $y = Cx^{16}$   
[Option ID = 17857]

95) Which of the following would be perpendicular to the line  $y = -3x + 7$ ?

[Question ID = 4466]

1.  $y = 1 / (-3x + 7)$   
[Option ID = 17861]
2.  $y = 7x - 3$   
[Option ID = 17862]
3.  $y = (1/3)x + 5$   
[Option ID = 17863]
4.  $y = 3x - 7$   
[Option ID = 17864]

Correct Answer :-

- $y = (1/3)x + 5$   
[Option ID = 17863]

96) How many integers are there in the solution set of  $|x - 2| < 5$ ?

[Question ID = 4467]

1. 11  
[Option ID = 17865]
2. 7  
[Option ID = 17866]
3. 9  
[Option ID = 17867]
4. 3  
[Option ID = 17868]

Correct Answer :-

- 9  
[Option ID = 17867]

97) The information below provides the details of an Achievement Test Score of 100 students.

Mean: 100

Median : 102

Standard Deviation: 10

First Quartile: 84

Third Quartile: 110

About 50 students in this sample have scored:

[Question ID = 4468]

1. Above 100  
[Option ID = 17869]
2. Between 84 and 110  
[Option ID = 17870]
3. Less than 100  
[Option ID = 17871]
4. Between 74 and 120  
[Option ID = 17872]

Correct Answer :-

- Between 84 and 110  
[Option ID = 17870]

98) How many four digit vehicle registration numbers are possible if no digit can be used twice and no number can begin with zero?

[Question ID = 4469]

1. 24  
[Option ID = 17873]
2. 2406  
[Option ID = 17874]
3. 4536  
[Option ID = 17875]
4. 160  
[Option ID = 17876]

Correct Answer :-

- 4536  
[Option ID = 17875]

99) If  $\theta$  is an angle in quadrant III and  $\tan(\theta - 30^\circ) = \cot \theta$ , what is the value of  $\theta$ ?

[Question ID = 4470]

1.  $240^\circ$   
[Option ID = 17877]
2.  $150^\circ$   
[Option ID = 17878]
3.  $30^\circ$   
[Option ID = 17879]
4.  $60^\circ$   
[Option ID = 17880]

Correct Answer :-

- $240^\circ$   
[Option ID = 17877]

100) For a given sequence, after the first term each term is inversely proportional with a fixed coefficient of proportionality to the term proceeding it. If the first two terms are 2 and 6, what will be the twelfth term?

[Question ID = 4471]

1. 12  
[Option ID = 17881]
2. 6  
[Option ID = 17882]
3.  $1/6$   
[Option ID = 17883]
4. 2  
[Option ID = 17884]

Correct Answer :-

- 6  
[Option ID = 17882]