

SPJET SAMPLE PAPER 1

Please fill in the following information with a ball-point pen:

STUDENT NAME

S P JAIN'S UNDERGRADUATE ENTRANCE TEST

Please read instructions in the answer sheet and question booklet before answering

1. Please check the number of questions before you start answering (Total no. of Sections : 5)
2. All rough work to be done only on the blank sheet provided at the back of the question booklet. Please do NOT write on the question paper
3. Laptops, calculators, slide rules, log tables, watch calculators, papers, cellular phones etc are not allowed inside the examination hall
4. You will not be allowed to leave the examination hall during the examination
5. Any candidate found violating the instructions and receiving/giving any form of help will be disqualified

The decision of S P Jain will be final and binding on the applicant in case of any dispute.

Signature of Invigilator

APPROPRIATION OF MARKS

Section	No. of Questions	Marks per question	Total Marks per Section
Logic	5	2	10
Diagrammatic Reasoning	4	4	16
Numeracy	6	3	18
IQ	10	2	20
Reading Comprehension	5	4	20
General Awareness	8	2	16
Total	38		100

ANSWER FOR THE QUESTIONS ARE PROVIDED AT THE END OF THE PAPER

Note

It is advisable that the candidate reads the question carefully and avoids marking answers thoughtlessly. Analyzing the previous question papers will help the candidate to get a clear picture of the pattern of questions asked in each section. Only answer if you are 100% sure about the correct answer.

LOGIC (50 x 2 marks = 10 marks.)

1. Five students of Blue Skies School are standing in a line from left to right to get their photograph taken. Each of these students is from a different house colour namely Red, White, Blue, Green and Yellow.

The two students standing at the extremes of the row are from the Red and Blue houses. The student from the Green house is standing to the right of the student from the White house. The student from the Yellow house is to the left of the student from the Blue house. Counting from the left of the row, the student from the Green house is in which place?

- (A) 2nd place
- (B) 3rd place
- (C) 4th place
- (D) Cannot be determined

2. Five school friends are meeting up 15 years after graduating from school and are comparing their wealth with one another. It is discovered that

- 1. A is wealthier than B
- 2. C is wealthier than A
- 3. C is wealthier than both D and E
- 4. D is less wealthy than B
- 5. D is not the poorest member in the group

Who is the least wealthy member in the group?

- (A) B
- (B) E
- (C) D
- (D) None of the above

3. At a particular discotheque seven music tracks are played one after the other on one particular night.

The seven tracks are A, B, C, D, E, F and G

The following information is given regarding the order in which these tracks are played

- 1. Track A is played second
- 2. Track B is played sometime after track F but not necessarily immediately after track F
- 3. Track E is played either as the fifth or the sixth track
- 4. Track E is played sometime after track D but not necessarily immediately after track D
- 5. Exactly one track is played between track B and track C
- 6. Track B was played sometime before track C

If track E is the fifth track played then which of the following options must be true

- (A) B is the third track played
- (B) C is the fourth track played
- (C) F is the sixth track played
- (D) G is the seventh track played

4. Eight people namely P, Q, R, S, T, U, V and W are trying to get from Amsterdam to Kingston. Two flights are departing on the route from Amsterdam to Kingston with a few individuals catching the morning flight and a few individuals catching the evening flight

The following information is provided regarding the flights

P was on the same flight as S but W was not on the same flight

U was on the same flight with P and T but V was not on this flight

Q and R were not on the same flight as S

If V and W were on the same flight who were the other two individuals who were on the same flight as theirs

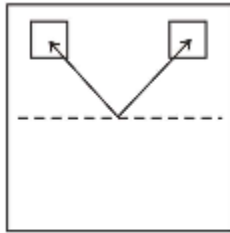
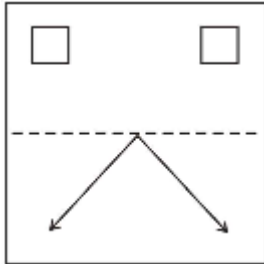
- (A) Q and S
(B) Q and T
(C) Q and R
(D) R and S
5. In the country of Vabona there are nine cities namely R, S, T, U, V, W, X, Y and Z. Claire while looking at the map of the country makes the following observations
- a. X is 100 kilometers to the west of Y
b. U is 300 kilometers east of X
c. T is 200 kilometers east of S
d. Y is 200 kilometers south of R
e. R is 100 kilometers north of S
f. W is 200 kilometers north of X
g. V is situated in the middle of Y and U
h. Z is situated in the middle of S and T

The distance between V and Z is

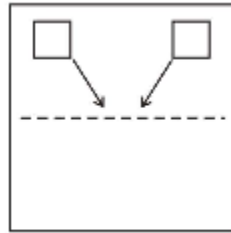
- (A) 100 kilometers
(B) 200 kilometers
(C) 300 kilometers
(D) Cannot be determined

DIAGRAMMATIC REASONING (40 x 4 marks = 16 marks.)

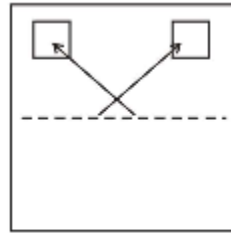
1. The below diagram is printed on a transparent sheet. This sheet is then folded along the dotted line. What design will be visible when the sheet is folded.



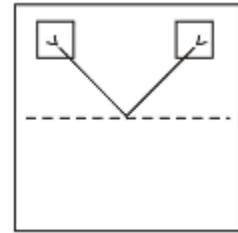
A



B

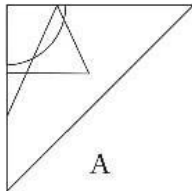
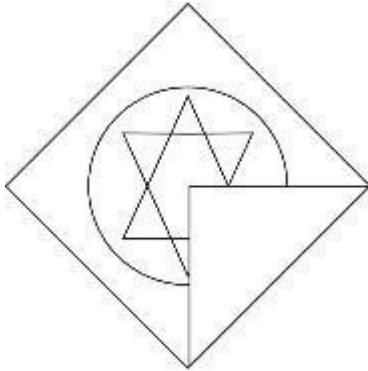


C

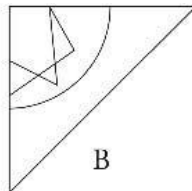


D

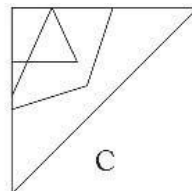
2. Which option completes the below diagram



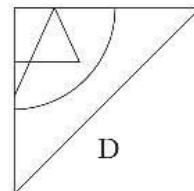
A



B

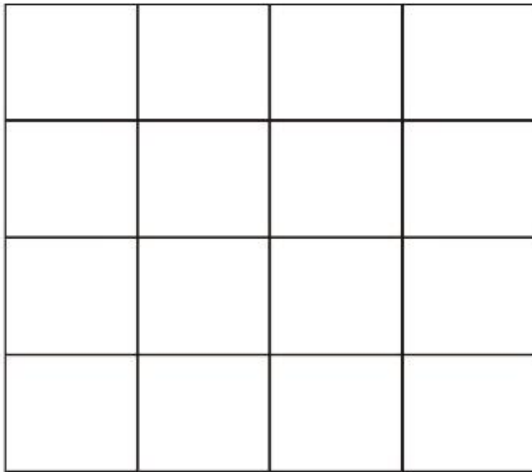


C



D

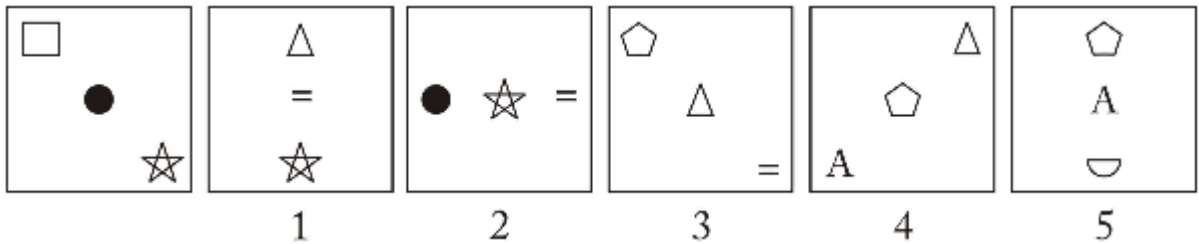
- 3.



How many squares are there in the above diagram

- (A) 16
- (B) 21
- (C) 25
- (D) 30

4. Given below is a series of diagrams. By interchanging the places of two of the below boxes the series will be in a logical order. Assume that the first box which is unnumbered is in the correct place. The places of which two boxes need to be switched



- (A) Box 1 and Box 5 need to switch places
- (B) Box 2 and Box 4 need to switch places
- (C) Box 1 and Box 2 need to switch places
- (D) Box 3 and Box 5 need to switch places

NUMERACY (60 x 3 = 18 marks.)

1. If the operator @ is defined as $a@b = (ab)^{1/2}$

Then what is $(16@81)@49 =$

- (A) 32
- (B) 42
- (C) 64
- (D) 80
- (E) None of the above

2. If $x^4 + 3x^2 - 28 = 0$

It is also known that $x > 0$

What does $x =$

- (A) 2
- (B) 3
- (C) 4
- (D) 8
- (E) 16

3. A school has two sections namely the secondary section and the primary section. In the school 80% of the students are considered gifted. 48% of the total number of students in the school are gifted and study in the secondary section. What percentage of the school students who are gifted study in the primary section?

- (A) 32%
- (B) 40%
- (C) 48%
- (D) 64%
- (E) 80%

4. What is the smallest integer value for x such that

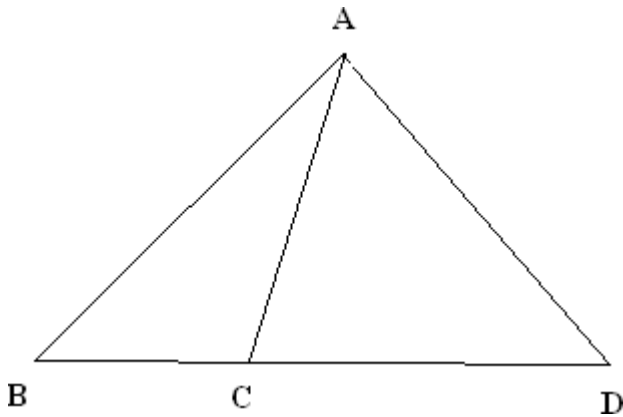
$$64^x > 2^{12}$$

- (A) 1
- (B) 2
- (C) 3
- (D) 4
- (E) 6

5. If Sid had scored 16 less marks in the test he would have scored exactly double the marks that Susan scored in the test. The marks of Sid and Susan combined equals 421
What were the marks scored by Sid in the test?

- (A) 135
- (B) 270
- (C) 286
- (D) 298
- (E) 341

6.



(The above figure is not drawn to scale)

In the above figure line segment $BC=AC=AD$

Angle $CDA = 30$ degrees

What is the measure of DAB ?

- (A) 60 degrees
- (B) 90 degrees
- (C) 120 degrees
- (D) 135 degrees
- (E) 150 degrees

IO (100 x 2 = 20 marks.)

1. What should replace the question mark?

5	9
80	26

7	4
14	51

3	6
?	12

- (A) 33
 - (B) 36
 - (C) 48
 - (D) 55
2. If Stephanie had one more brother she would have twice as many brothers as sisters. However instead if she had one more sister she would have an equal number of brothers and sisters. How many siblings in total does Stephanie have?
- (A) 2
 - (B) 3
 - (C) 4
 - (D) 5
3. For a particular rocket launch sequence the following countdown system is followed. The countdown happens first by one place, then by two places, then by three places, then by four places and so on. For instance a typical countdown would be 21, 20, 18, 15, 11, 6, 0
- Which of the following numbers can we begin the countdown at so that it will finish at zero?
- (A) 129
 - (B) 130
 - (C) 136
 - (D) 138

4. 1 4 3 8 9 7 6 4 8 9 3 8 9 9 6 5 3 7 8 9 9 7 4 3 6 7 5 3 5 9 1

In the above sequence of numbers how many such prime numbers are present which on adding to the next number in the sequence yield an odd number

- (A) 5
- (B) 6
- (C) 7
- (D) 8

5. There are 16 balls in a jar. Two balls are coloured violet, two are coloured indigo, two are coloured blue, two are coloured green, two are coloured yellow, two are coloured orange, two are coloured red and two are coloured black. A person randomly starts removing balls from the jar. What is the minimum number of balls he needs to remove from the jar to ensure that he has a got at least one pair of balls having the same colour.

- (A) 3
- (B) 9
- (C) 15
- (D) Cannot be determined

6. What should replace the question mark below?

143 (235416) 265
298 (?) 103

- (A) 653928
- (B) 398201
- (C) 103290
- (D) 183920

7. In the below diagram chose the option which would replace the question mark?

8	J
K	9
1	D
R	15
18	V
H	4
12	?
U	16

- (A) P
- (B) Q
- (C) R
- (D) S

8. Upon unscrambling the letters below a particular word is formed. Which of the option currently categorizes the word
A R G U P O L T
- (A) Name of an European Country
 - (B) Name of a river in North America
 - (C) Name of an animal found in Africa
 - (D) Name of a city in Asia
9. Which of the following words is closest in meaning to the word “succinct”
- (A) Complexity
 - (B) Concise
 - (C) Incomplete
 - (D) Mediocrity
10. Which of the following words is spelt incorrectly?
- (A) Repraisal
 - (B) Carcinogen
 - (C) Disruptive
 - (D) Cantankerous

READING COMPREHENSION (50 x 4 = 20 marks.)

If you look up the word dyslexia in the dictionary, you'll find that it is derived from the Greek word "dys" (meaning poor or inadequate) plus "lexis" (words or language). Perhaps you know someone with dyslexia. If so, you probably know one of the common problems they have is transposing letters or numbers. These problems can occur in listening, writing, reading, spelling or handwriting. In other words, dyslexic people process language poorly, but that doesn't mean they aren't intelligent.

Dyslexia is not related to low intelligence. Dyslexia is a unique mindset that is often gifted and productive, but learns differently than other minds. In fact some of the most brilliant minds of our time have been known to have dyslexia: Albert Einstein, Alexander Graham Bell, Thomas Edison, Winston Churchill, Benjamin Franklin, Mozart and John Lennon to mention only a few. There are people with dyslexia in many types of highly respected careers such as: Walt Disney, Tom Cruise, Danny Glover, Cher, Magic Johnson, Carl Lewis, Bruce Jenner and General George Patton. Most dyslexics often have a better sense of spatial relationships or better use of their right brain

How it affects each person varies significantly. Dyslexia somehow manifests itself differently from individual to individual. However, the only common factor seems to be that they read at levels significantly lower than typical people of a similar age and intelligence.

Reading, whether silent or aloud, has to do with processing sound. Sound is a very complex mixture of frequencies with varying intensities. Analyzing it so quickly and accurately is exceedingly difficult. Even the most sophisticated computers still have trouble analyzing sound fully. That is why many voice recognition systems are still imperfect. We analyze sounds in the inner ear, more specifically in the cochlea. If the cochlea is not analyzing sounds accurately, dyslexia can occur.

Each sound has a base frequency and some higher frequencies (or higher harmonics). When some sounds have nearly the same frequency, differing only in the higher harmonics, a person with dyslexia might misinterpret them. For example a "B" and "P" have similar base frequencies. Likewise, a "T" and a "D" do also. When someone says to a dyslexic individual "Bob", they are not sure what was said. It could be "Bob" or "Bop" or "Pop." By the time they have figured out what was said, the speaker is already into his next sentence or maybe more. Consequently, the person with dyslexia tends to process language at a slower rate. They just have an auditory processing problem.

Reading is a complex act that requires the ears and eyes to work together synchronously. As the eyes see a letter, the ears identify the corresponding sound even when reading silently. Then, the vestibule leads the eye from letter to letter and the cochlea translates each letter into a sound. Ideally, both operations should happen almost simultaneously. The trouble starts when the delay is too long. So, if the vestibule and cochlea are not in sync, the eyes and ears are not in sync either.

To make things more complicated, each sound lasts a specific time. The ear constantly has to adjust to these rapid changes. When it does not, the eyes and ears are no longer in synch. The right sound is not put together with the right letter. Without the sound, the letter remains dead. The meaning cannot emerge. The dyslexic is left second-guessing, hoping for a miracle taking the chance to utter finally a sound that might fit the letter of the alphabet dancing on the page.

1. Why does the author mention the fact that voice recognition systems are imperfect?
 - (A) To prove that computing technology is not as advanced as previously thought of
 - (B) To showcase the complexity and differences among different languages
 - (C) To show the similarities between the brain and the computer
 - (D) To showcase the complexity of sound and the difficulty in understanding sound

2. According to the passage why do dyslexic individuals process language slower than other individuals?
 - (A) Due to dyslexia individuals tend to ignore when others are speaking to them as they are very imaginative and may not realize what is going on around them
 - (B) Dyslexic individuals have difficulty in focusing on one subject at a time and are distracted when listening to others thus they may lose track after a few sentences.
 - (C) Dyslexic individuals have trouble in discerning the subtler variations in sounds which causes them to confuse between various letters.
 - (D) None of the above

3. What is the primary purpose of the passage?
 - (A) To explain how humans interpret sound and written material
 - (B) To describe how dyslexia affects the functioning of the brain
 - (C) To detail the techniques to cope with dyslexia
 - (D) To narrate the experiences of how dyslexic individuals cope with the different emotional challenges of dyslexia

4. Which of the following is not true as per the passage mentioned?
 - (A) Dyslexic individuals have excelled in a myriad set of activities
 - (B) The effects of dyslexia are different for different people
 - (C) The eyes are the only organ required in the reading process
 - (D) All three of the above statements are true as per the passage

5. What does the word intensities mean as used in the above passage?
 - (A) Strengths
 - (B) Meanings
 - (C) Interpretations
 - (D) Descriptions

GENERAL AWARENESS (80 x 2 = 16 marks.)

1. Who is the current chairman of the Federal Reserve of the United States of America?
 - (A) Alan Greenspan
 - (B) Ben Bernake
 - (C) Timothy Geithner
 - (D) Henry Paulson

2. Who won the men's double title at the Wimbledon Championships 2011?
 - (A) Michael Bryan and Bob Bryan
 - (B) Mahesh Bhupati and Leander Paes
 - (C) Robert Lindstedt and Horia Tecau
 - (D) None of the above

3. Which of the following technology companies recently concluded in May 2011 an IPO on the NYSE ?
 - (A) LinkedIn
 - (B) Facebook
 - (C) Myspace
 - (D) Groupon

4. Who wrote the book Midnight's Children which has been awarded the Bookers Prize as well as the Booker of Bookers prize?
 - (A) Vikram Sheth
 - (B) V S Naipaul
 - (C) Salman Rushdie
 - (D) Arundhati Roy

5. Havana is the capital of which of the following countries?
 - (A) Costa Rica
 - (B) Cuba
 - (C) Jamaica
 - (D) Panama

6. Which of the following companies is Stephen Elop currently the CEO of?
 - (A) Nokia
 - (B) Apple Inc
 - (C) Google
 - (D) Microsoft

7. Who is the author of the Lord of the Rings series of books?

- (A) Mark Twain
- (B) J K Rowling
- (C) J RR Tolkien
- (D) Tom Clancy

8. In Roman Mythology Neptune is the god of?

- (A) The Skies
- (B) The Seas
- (C) War
- (D) Love

ANSWERKEY FOR SPJET SAMPLE PAPER 1

LOGIC

1	B
2	B
3	D
4	C
5	A

IQ

1	A
2	D
3	C
4	B
5	B
6	D
7	B
8	A
9	B
10	A

DIAGRAMMATIC REASONING

1	A
2	D
3	D
4	C

READING COMPREHENSION

1	D
2	C
3	B
4	C
5	A

NUMERACY

1	B
2	A
3	B
4	C
5	C
6	D

GK

1	B
2	A
3	A
4	C
5	B
6	A
7	C
8	B