

GENERAL KNOWLEDGE AND COMPUTER BASICS

Read the questions that follow and identify the correct choice. (Questions 1-20)

1. Name the author of the book 'Predictably Irrational'.
(A) Thomas J. Sargent
(B) Dan Ariely
(C) Sigmund Freud
(D) Ester Duflo
2. Which of the following countries will host 2018 Winter Olympics?
(A) UK
(B) China
(C) South Korea
(D) Japan
3. Who among the following has been elected recently as president of Indian Olympic Association (IOA)?
(A) S. Srinivasan
(B) N. Ramachandran
(C) K Narayanan
(D) Rajeeb Sukla
4. Name the planet in the solar system with maximum number of satellite.
(A) Venus
(B) Mercury
(C) Jupiter
(D) Saturn
5. When was the Planning Commission set up in India?
(A) 1947
(B) 1950
(C) 1951
(D) 1957
6. Which of the following human diseases is caused by virus?
(A) Plague
(B) Cholera
(C) Rabies (Hydrophobia)
(D) Pneumonia
7. 'Gerontology' is the study of
(A) Certain Aspects of Ageing
(B) Muscles
(C) Kidneys
(D) Cell
8. What does EEPROM stand for?

- (A) Electronically Erasable Programmable Read Only Memory
 - (B) Electrically Erasable Programmable Read Only Memory
 - (C) Enabling Erasable Program on Read Only Memory
 - (D) Electronically Enabled Programmable Read Only Memory
9. When and where were the first Commonwealth Games held?
- (A) 1894, Greece
 - (B) 1930, Canada
 - (C) 1920, Australia
 - (D) 1934, Holland
10. Where is headquarters of World Trade Organization located?
- (A) Geneva
 - (B) New York
 - (C) Washington DC
 - (D) Vienna
11. Which company has the tagline 'The World's Online market Place'?
- (A) Amazon.com
 - (B) Flipcart.com
 - (C) Jungle.com
 - (D) EBay
12. Web pages are written using
- (A) HTTP
 - (B) HTML
 - (C) URL
 - (D) WAP
13. When was the first edition of the Bombay Plan published?
- (A) 1944
 - (B) 1945
 - (C) 1946
 - (D) 1947
14. UNIVAC is an example of
- (A) First generation computer
 - (B) Second generation computer
 - (C) Third generation computer
 - (D) Fourth generation computer
15. Who among the following received the Nobel Prize in Economics for the year 2013?

- (A) Elinor Ostrom
- (B) Christopher A. Sims
- (C) Lars Peter Hansen
- (D) Lloyd S. Shapley

16. Name the currency of Vietnam.

- (A) đồng
- (B) Zloty
- (C) Som
- (D) Riel

17. At the 58th Bocskai International Tournament which concluded in Hungary on 10 February 2014, Indian Boxers finished

- (A) Second
- (B) Third
- (C) Fourth
- (D) Fifth

18. Which country is called as the 'Land of four seasons'?

- (A) Turkey
- (B) Peru
- (C) Venezuela
- (D) Norway

19. Name India's first 'Super Computer'.

- (A) Bikram
- (B) Trisul
- (C) Param
- (D) Akash

20. Which of the following is an operating system?

- (A) Dos
- (B) Java
- (C) Unix
- (D) Window XP

VERBAL REASONING

Read the instructions provided before each set of questions and answer them (20-60)

Identify the odd word in each of the following questions.

21. Identify the odd word

- (A) Avertable
- (B) Evitable
- (C) Preventable
- (D) Loathing

22. Identify the odd word

- (A) Attire
- (B) Grab
- (C) Garb
- (D) Costume

23. Identify the odd word

- (A) Pother
- (B) Dither
- (C) Slither
- (D) Fizz

24. Identify the odd word

- (A) Affection
- (B) Ascribe
- (C) Impute
- (D) Attribute

Identify the odd word in each of the following questions.

25. Identify the odd word

- (A) Reed
- (B) Tree
- (C) Straw
- (D) Pipe

26. Identify the odd word

- (A) Cadence
- (B) Beat
- (C) Meter
- (D) Inch

27. Identify the odd word

- (A) Hibernation
- (B) Take up
- (C) Withdraw
- (D) Depression

In each of the following arrange the words in a meaningful sequence.

28. A. Afforestation B. Growth C. Saplings D. Water E. Protection
- (A) BDACE
 - (B) CDEBA
 - (C) CDABE
 - (D) BADEC
29. A. Cure B. disease C. Hospital D. Operation E. doctor
- (A) BEADC
 - (B) AECBD
 - (C) BECDA
 - (D) CBDAE
30. A. Realization B. Contentment C. Suffering D. Desire E. Failure
- (A) DACEB
 - (B) DECBA
 - (C) BDCEA
 - (D) DECAB
31. A. Crushing B. Rolling C. Pulp D. Paper E. Bamboo
- (A) EACBD
 - (B) DEABC
 - (C) EBCDA
 - (D) DACBE

In each of the following questions four pairs of synonyms are supplied, out of which three pairs are alike/similar in certain ways and the fourth one is different (not a pair of synonyms). Choose the ODD pair out.

32. Identify the odd pair
- (A) Cook: Chef
 - (B) Gourmet: Connoisseur
 - (C) Foodie : Epicure
 - (D) Bon vivant: Sensualist

33. Identify the odd pair

- (A) Tint: Pigment
- (B) Colour: Stare
- (C) Tingle: Itch
- (D) Stain: Tincture

34. Identify the odd pair

- (A) Dynasty: Bizarre
- (B) Phratry: Kinfolk
- (C) Sept: Lineage
- (D) Cajole: Stain

35. Identify the odd pair

- (A) Philander: Vamper
- (B) Frat: Stoic
- (C) Dally: Minx
- (D) Coquet: Flirt

The following questions consist of two words each that have a certain relationship with each other, followed by four pairs of words. Select the pair which has the SAME relationship (or the most similar relationship) as the original pair of words.

36. Water: Bottle

- (A) Mind: Brain
- (B) Dune: Sand
- (C) Man: Heart
- (D) Wine: Holy

37. Repellant: Mosquito

- (A) Magnet: Iron
- (B) Oil: Water
- (C) Muse: Inspiration
- (D) Pen: Drive

38. Plastic: Fabrication

- (A) Wood: Chair
- (B) Metal: Sculpting
- (C) Brick: building
- (D) Petrol: Container

The following questions consist of two words each that have a certain relationship with each other, followed by four pairs of words. Select the pair which has the SAME (or the most similar) relationship as the original pair of words.

39. Food: Energy
(A) Power: Standby
(B) Pen drive: Data
(C) Petrol: Power
(D) Battery: Backup

40. Window: Paint
(A) Film: Coating
(B) Bed: Cover
(C) TV: Screen
(D) Mobile: Box packet

In the following questions there is a certain relationship between two given words on both sides of (::). Only one word is given on the other side of (::). Choose the MOST APPROPRIATE word from the alternatives give below and supply the fourth word.

41. Cloud: Rain :: Smoke: ?
(A) Flame
(B) Tyre
(C) Fumigate
(D) Dope

42. Mary: Jesus:: Bitch: ?
(A) Kitten
(B) Goddess
(C) Puppy
(D) Dog

Choose the MOST APPROPRIATE definition for the following words.

43. Fester
(A) To make merry
(B) A festival like Easter
(C) To move both slow and fast
(D) Ripen and generate pus
44. Attractant
(A) The source of attention
(B) Difficult to attract
(C) Anything that draws attention
(D) A person with magical qualities
45. Circumspect
(A) A circular metallic object
(B) Heedful of potential sequences

- (C) To look around in a circle carefully
- (D) To be over-cautious

46. Degenerate

- (A) Unrestrained by convention or morality
- (B) To dissolve quickly
- (C) To generate by deactivating
- (D) A form of organism

In the questions below four words are provided at the beginning. If you add one of the four choices to one of the four words given at the beginning, you will get a new word. Find the correct choice.

47. Haste/ State/ Hate/ Goat

- (A) Stable
- (B) Tut
- (C) Rate
- (D) Able

48. Gore/ Store/ Lore/ Floor

- (A) House
- (B) Louse
- (C) Paste
- (D) Ten

49. Plan/ Tan /Gain/ San

- (A) Pet
- (B) Ate
- (C) Gate
- (D) Rate

50. Soon/ Tune/ Don / Scone

- (A) Bess
- (B) Seas
- (C) Less
- (D) Mess

In the following questions identify the word which has the OPPOSITE meaning to one of the three words presented at the beginning.

51. Drown / Anger / Courage

- (A) Jump
- (B) Rage
- (C) Despair
- (D) Awe

52. Crazy / Hasty / Musty

- (A) Slack
- (B) Stark
- (C) Hark
- (D) Bark

53. Pine / Shine / Dine

- (A) Lighted
- (B) Stalled
- (C) Perforated
- (D) Muted

54. Kind / Hind / Mind

- (A) Reed
- (B) Deed
- (C) Lead
- (D) Steed

55. Lice / Rise / Guys

- (A) Dominate
- (B) Plummet
- (C) State
- (D) Late

In the questions below a word is given with a number of synonyms or similar words in the option. Identify the option which is the least appropriate.

56. Begrudge

- (A) Resent
- (B) Envy
- (C) Redolent
- (D) Dislike

57. Discourse

- (A) Sermon
- (B) Divulge
- (C) Speech

(D) Discuss

58. Edict

- (A) Fiat
- (B) Decree
- (C) Promise
- (D) Edict

The questions that follow are based on codes. Read the instructions carefully and answer. In a certain code, “She is a good girl,” is written as XYZAB and “Catch that young sheep,” is written as CDEF.

59. “Is that girl young,” will be written as:

- (A) YDBE
- (B) YDEB
- (C) YEDB
- (D) YBED

60. “Good sheep catch young” will be written as

- (A) AFEC
- (B) AFCE
- (C) ACEF
- (D) AEFC

COMPREHENSION

Read the poem below carefully and answer the questions that follow (questions 61-70). Choose the most appropriate choice for each question.

More and more studies are showing how greatly the mind depends on the brain. For example, as the brain develops in childhood, so does the mind; if the brain is ever damaged, so is the mind. Subtle shifts in brain chemistry will alter mood, concentration, and memory (Meyer and Quenzer 2004). Using powerful magnets to suppress the emotion-processing limbic system changes how people make moral judgments (Knoch et al. 2006). Even some spiritual experiences correlate with neural activities (Vaitl et al. 2005).

Any aspect of the mind that is not transcendental must rely upon the physical processes of the brain. Mental activity, whether conscious or unconscious, maps to neural activity, much like a picture of a sunset on your computer screen maps to a pattern of magnetic charges on your hard drive. Apart from potential transcendental factors, the brain is the necessary and proximally sufficient condition for the mind; it’s only proximally sufficient because the brain is nested in a larger network of biological and cultural causes and conditions, and is affected itself by the mind.

Of course, no one yet knows exactly how the brain makes the mind, or how—as Dan

Siegel puts it—the mind uses the brain to make the mind. It's sometimes said that the greatest remaining scientific questions are: What caused the Big Bang? What is the grand unified theory that integrates quantum mechanics and general relativity? And what is the relationship between the mind and the brain, especially regarding conscious experience?

The last question is up there with the other two because it is as difficult to answer, and as important.

To use an analogy, after Copernicus, most educated people accepted that the earth revolved around the sun. But no one knew how that actually happened. Roughly 150 years later, Isaac Newton developed the laws of gravity, which began to explain how the earth went about the sun. Then, after 200 more years, Einstein refined Newton's explanation through the theory of general relativity. It could be 350 years, and maybe longer, before we completely understand the relationship between the brain and the mind. But meanwhile, a reasonable working hypothesis is that the mind is what the brain does.

61. More and more studies are showing that:

- (A) The mind is manipulated by the brain
- (B) Magnets can change concentration
- (C) Chemical shifts in brain modifies memory
- (D) The mind modifies the stem cells

62. Identify the incorrect statement:

- (A) Brain damage alters the mind
- (B) Spirituality is dependent of the mind
- (C) Brain and mind develop from childhood
- (D) Brain changes alter mental states

63. "Limbic system" refers to:

- (A) A brain system that deals with emotions
- (B) A brain system that deals with perception
- (C) A brain system that deals with attention
- (D) A brain system that deals with decision making

64. "The brain is the necessary and proximally sufficient condition of the mind." What does this statement imply?

- (A) The brain is born out of the mind
- (B) The mind is born independent of the brain
- (C) Without mind the brain would not exist
- (D) Without the brain mind would not exist

65. Why is the analogy of the computer screen and magnetic charges used to describe an activity of the brain?

- (A) Because it shows how the mind and brain are correlated
- (B) Because it shows that networks are the essence of brain
- (C) Because it shows that networks are the essence of mind

(D) Because the mind cannot exist without the brain

66. "The mind uses the brain to make the mind." Why is this remark made:
- (A) Because the brain can simply make up the mind
 - (B) Because mind can simply not make up the brain
 - (C) Because the brain, as a mechanical device, doesn't explain how mind is born
 - (D) Because the brain-mind relation is an unsolvable mystery
67. What does "Big Bang" refer to:
- (A) A kind of explosion of the star
 - (B) Inception of the black hole
 - (C) Origin of the universe
 - (D) The centre of the Milky Way
68. "Potential transcendental factors" suggest that the author wishes to tell us:
- (A) That the mind and brain can transcend and go beyond their limits
 - (B) That the brain transcends mind
 - (C) That mind transcends the brain
 - (D) That the relation between mind and brain are inexplicable
69. Why does the author agree that "the mind is what the brain does?"
- (A) Because there is no way to get a grip of the transcendental factor
 - (B) Because brain activities can now be exactly mapped to mind activities
 - (C) Because one is the hardware and the other is the software
 - (D) Because mind is virtual and the brain is actual
70. Chose the most appropriate title for the piece:
- (A) Brain vs. Mind
 - (B) Brain and Mind
 - (C) Mind-Brain Debate
 - (D) Mind-Brain Problem

**Read the text below carefully and answer the questions that follow (questions 71-80).
Choose the most appropriate choice for each question.**

Who are these? Why sit they here in twilight?
Wherefore rock they, purgatorial shadows,
Drooping tongues from jays that slob their relish,
Baring teeth that leer like skulls' teeth wicked?
Stroke on stroke of pain,- but what slow panic,
Gouged these chasms round their fretted sockets?
Ever from their hair and through their hands' palms
Misery swelters. Surely we have perished
Sleeping, and walk hell; but who these hellish?

-These are men whose minds the Dead have ravished.
Memory fingers in their hair of murders,
Multitudinous murders they once witnessed.
Wading sloughs of flesh these helpless wander,
Treading blood from lungs that had loved laughter.
Always they must see these things and hear them,
Batter of guns and shatter of flying muscles,
Carnage incomparable, and human squander
Rucked too thick for these men's extrication.

Therefore still their eyeballs shrink tormented
Back into their brains, because on their sense
Sunlight seems a blood-smear; night comes blood-black;
Dawn breaks open like a wound that bleeds afresh.
-Thus their heads wear this hilarious, hideous,
Awful falseness of set-smiling corpses.
-Thus their hands are plucking at each other;
Picking at the rope-knouts of their scourging;
Snatching after us who smote them, brother,
Pawing us who dealt them war and madness.

71. Who are the people being referred to?

- (A) Lunatics
- (B) POWs
- (C) Prisoners
- (D) Ex-soldiers

72. "Gouge" means to:

- (A) Scold
- (B) Scratch
- (C) Extract
- (D) Focus

73. The picture painted in the first stanza is that of
- (A) Sadness
 - (B) Misery
 - (C) Shock
 - (D) Wonder
74. How can the dead ravish living men?
- (A) Through death
 - (B) Memories
 - (C) Violence
 - (D) Anger
75. "Ravish" in the context of this poem means:
- (A) Violate
 - (B) Destroy
 - (C) Coagulate
 - (D) Smash
76. How are the horrible dead described?
- (A) Multitudinous murder
 - (B) Wading sloughs of flesh
 - (C) Blood of lungs
 - (D) Memory fingers
77. What are the other horrors these men have experienced than death and dying?
- (A) Batter of guns
 - (B) Shatter of muscles
 - (C) Carnage
 - (D) Human squander
78. Why does the dawn torment them?
- (A) Because it looks like a blood smear
 - (B) Because of its darkness
 - (C) Because it breaks like a wound
 - (D) Because it is hideous
79. What are the smiles of these men compared to?
- (A) Blood cuddling monsters
 - (B) Awful falseness
 - (C) Red sun
 - (D) Set grimace on a dead face
80. Which is the most apt title for the piece?
- (A) Nightmare
 - (B) Sad lunatics
 - (C) Death
 - (D) Barbarism

LOGICAL REASONING

Read the questions that follow and identify the correct choice. (81-120)

81. A number when divided by 5 leaves a remainder of 4. When the twice of that number is divided by 5, what will be the remainder?
(A) 1
(B) 2
(C) 3
(D) 4
82. If the sum of a number and its reciprocal is thrice the difference of the number and its reciprocal, find the number.
(A) $\pm\sqrt{\frac{1}{3}}$
(B) $\pm\sqrt{2}$
(C) $\pm\sqrt{\frac{2}{3}}$
(D) $\pm\sqrt{\frac{1}{2}}$
83. The average age of Ramesh and Amar is 35 years. If Jagdish replaces Ramesh, the average age becomes 32 years and if Jagdish replaces Amar, the average age becomes 38 years. If the average age of Rahul and Sashikant is half the average age of Ramesh, Amar and Jagdish, find the average age of all the five persons.
(A) 25
(B) 26
(C) 27
(D) 28
84. The incomes of Rajan, Umesh and Harapriya are in the ratio of 12 : 9 : 7 and their spendings are in the ratio 15 : 9 : 8. If Rajan saves 25% of his income, find the ratio of the savings of Rajan, Umesh and Harapriya.
(A) 15 : 12 : 6
(B) 12 : 8 : 5
(C) 15 : 18 : 11
(D) 16 : 18 : 12

85. In a mixture of milk and water, milk is only 99 litres. If the same quantity of milk would be presented in another mixture of milk and water where total volume would be 198 litres less than the actual mixture, then the concentration of milk in the actual mixture would have been 13.33% point less than that of the new mixture. Find the concentration of milk in actual mixture.
- (A) 20%
(B) 15.75%
(C) 16.88%
(D) 22.33%
86. A company sells a product to a wholesaler making a profit of 10%. The wholesaler, in turn, sells it to the retailer making a profit of 10%. A customer buys it at Rs 990 and the profit of the retailer is estimated to be $2\frac{3}{11}$ %. Find the cost incurred by the company to produce the product.
- (A) Rs 750
(B) Rs 780
(C) Rs 800
(D) Rs 820
87. A certain sum amounts to Rs 8988.8 in two years and to Rs 9528.128 in three years at compound interest per annum. Find the principal and the rate of interest.
- (A) Rs 8000, 6%
(B) Rs 10000, 6%
(C) Rs 8000, 8%
(D) Rs 10000, 8%
88. Preeti, Madhu and Smita started a work together. After 5 days Smita left the work and Madhu left the work after working 8 days. In how many more days Preeti would have completed the remaining work if they take 20, 60 and 30 days individually to finish the work?
- (A) 5
(B) 6
(C) 7
(D) 8
89. A train of length 100 metres takes $\frac{1}{6}$ minute to pass over another train of 150 metres long coming from the opposite direction. If the speed of the first train is 60 km/h, what is the speed of the second train?
- (A) 30 km/h
(B) 35 km/h
(C) 40 km/h
(D) 45 km/h

90. Three cubes of metal, whose edges are 3 cm, 4 cm and 5 cm respectively, are melted to form a new cube. Find the surface area of the new cube.

- (A) 42 cm^2
- (B) 124 cm^2
- (C) 188 cm^2
- (D) 216 cm^2

91. An acute angle made by a side of parallelogram with other pair of parallel sides is 60° . If the distance between these parallel sides is $6\sqrt{3}$, find the other side.

- (A) 10 cm
- (B) 12 cm
- (C) $\sqrt[3]{12}$
- (D) $12\sqrt{5}$

92. What is the sum to n terms of the series

$1 + (1+2) + (1+2+3) + (1+2+3+4) + \dots$?

- (A) $\frac{(n+1)(2n+1)}{2}$
- (B) $\frac{(n+1)(2n+1)}{6}$
- (C) $\frac{n(n+1)(n+2)}{6}$
- (D) $\frac{n(n+1)(n+2)}{2}$

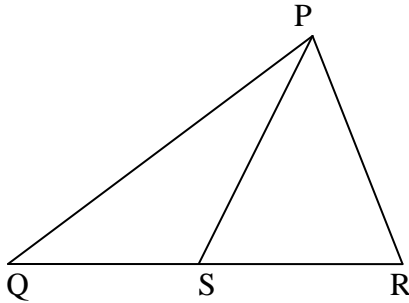
93. What is the sum of $\frac{1}{2} + \frac{3}{2^2} + \frac{5}{2^3} + \dots + \frac{2n-1}{2^n}$?

- (A) $\left(3 - \frac{2n+3}{2^n}\right)$
- (B) $\left(3 - \frac{2n}{2^n}\right)$
- (C) $\left(3 - \frac{2n-3}{2^n}\right)$
- (D) $\left(2 - \frac{2n-2}{2^n}\right)$

94. A committee of 7 persons is to be chosen from 13 persons of whom 6 are civil society members and 7 are politicians. In how many ways can the selection be made so as to retain a majority of politicians?
- (A) 864
(B) 956
(C) 1032
(D) 1057
95. Four dice are thrown simultaneously. What is the probability that at least two of them show the same face?
- (A) $\frac{26}{72}$
(B) $\frac{26}{56}$
(C) $\frac{47}{72}$
(D) $\frac{11}{56}$
96. In a school, 28 students joined NCC, 30 students joined NSS and 32 students joined Scout. 6 students joined NCC and NSS, 8 students joined NSS and Scout, and 10 students joined Scout and NCC. The number of students who joined only one scheme is 54. Also 20 students joined only NSS. Every student joined at least one scheme out of the three schemes. How many students joined the school?
- (A) 50
(B) 60
(C) 64
(D) 70
97. In a marriage party, guests give pose for photographs. If they stand 4 persons per row, 2 persons are left out. If they stand 5 persons per row, 3 are left out. If they stand 6 persons per row, 4 are left out. If the total number of guests is greater than 100 and less than 150, find the number guests attending the marriage party?
- (A) 112
(B) 116
(C) 118
(D) 124
98. A watch seller sells two watches for Rs. 1875 each. The first one is sold at 25% profit and the second one is sold at 25% loss. Find the percentage loss or gain to the shop owner?
- (A) 5.75% loss
(B) 4.95% profit
(C) 6.25% loss
(D) 6.75% loss

99. Adish, Anubhav and Akanksha can finish a work independently in 10, 12 and 15 days. Akanksha started the work and after 1 day, Anubhav joined her. After 1 day of Anubhav, Adish also joined them but left 3 days before completion of the work, while Anubhav left two days before completion of the work. Find the total number of days taken to complete the work?
- (A) 5 days
 (B) 6 days
 (C) 7 days
 (D) 8 days

100. In $\triangle PQR$, $PQ = 9$, $QR = 10$, $PR = 12$. What is the length of median through P?



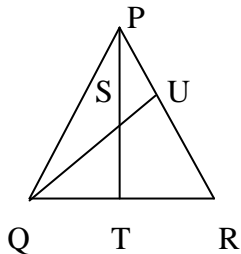
- (A) $5\sqrt{\frac{7}{2}}$
 (B) $7\sqrt{\frac{5}{2}}$
 (C) $5\sqrt{\frac{5}{2}}$
 (D) $7\sqrt{\frac{7}{2}}$
101. A triangle has sides of lengths 10, 24 and n , where n is a positive integer. Find the number of values of n for which this triangle has three acute angles.
- (A) 1
 (B) 2
 (C) 3
 (D) 4

102. How many m digit numbers can be formed using n distinct digits?
- (1) $m = 3$ and $n = 5$
(2) $n = 2m$
- (A) Statement (1) ALONE is sufficient to answer the question but statement (2) alone is not sufficient;
(B) Statement (2) ALONE is sufficient to answer the question but statement (1) alone is not sufficient;
(C) The two statements TAKEN TOGETHER are sufficient to answer the question, but NEITHER statement ALONE is sufficient;
(D) EACH statement ALONE is sufficient to answer the question.
103. Find the number of ways in which 5 identical green balls and 7 identical red balls are arranged in a row such that no two green balls are together.
- (A) 48
(B) 56
(C) 62
(D) 66
104. A dice is tossed 5 times. What is the probability that 5 shows up exactly thrice?
- (A) $\frac{12}{388}$
(B) $\frac{25}{388}$
(C) $\frac{125}{3888}$
(D) $\frac{5}{38}$
105. There are 5 green, 4 yellow, 3 red and 8 purple balls in a bag. If three balls are chosen at random without replacement, find the probability that they are of same color?
- (A) $\frac{71}{1140}$
(B) $\frac{71}{140}$
(C) $\frac{7}{140}$
(D) $\frac{71}{114}$

106. Find the sum of $1 + 2a + 3a^2 + 4a^3 + \dots \infty$.

- (A) $\frac{1}{(1+a)^2}$
- (B) $\frac{1}{1+a}$
- (C) $\frac{1}{(1-a)^2}$
- (D) $\frac{1}{(1-a)}$

107. In the following figure, PQR is a triangle. T is a point on QR such that $QT : TR = 6 : 5$ and S is a point on PT such that $PS : ST = 2 : 3$. If QS when produced meets PR at U such that $PU = 8$ cm. What is the length of PR?



- (A) 20 cm
- (B) 24 cm
- (C) 26 cm
- (D) 30 cm

108. A circle is inscribed in a triangle with sides measuring 4 cm, 6 cm and 8 cm. Find the area of the circle in sq centimeters.

- (A) $\frac{3\pi}{3}$
- (B) $\frac{5\pi}{3}$
- (C) $\frac{7\pi}{3}$
- (D) $\frac{9\pi}{3}$

109. How is M related N?

- (1) N is the brother of M.
- (2) N is M's son.

- (A) Statement (1) ALONE is sufficient to answer the question but statement (2) alone is not sufficient;
- (B) Statement (2) ALONE is sufficient to answer the question but statement (1) alone is not sufficient;
- (C) The two statements TAKEN TOGETHER are sufficient to answer the question, but NEITHER statement ALONE is sufficient;
- (D) EACH statement ALONE is sufficient to answer the question.

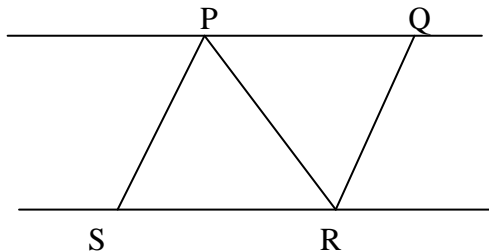
110. The capacity of a container is 20 gallons and the container is filled with spirit. Four gallons of spirit is drawn out and the container is again filled with water. If this process is repeated 5 times, how much spirit will be left out in the resulting mixture finally?

- (A) 6 gallons
- (B) $6\frac{346}{625}$
- (C) $6\frac{346}{425}$
- (D) $6\frac{346}{525}$

111. What is the value of $\sqrt{6+\sqrt{6+\sqrt{6+\dots}}}$?

- (A) 1.33
- (B) 2
- (C) 2.67
- (D) 3

112. In the following figure, PQRS is a rhombus. $\angle SPQ = 120^\circ$. Find $\angle SRP$.



- (A) 45°
- (B) 60°
- (C) 70°
- (D) 75°

113. What is the total inner surface area (in sq cm) of a closed hollow cylinder of outer radius 13 cm, outer height 15 cm and thickness 3 cm?
(A) x sq cm
(B) 370π sq cm
(C) 380π sq cm
(D) 400π sq cm
114. What is the value of k , if the equation $2a^2 - 7a + k = 0$ has one root which is twice the reciprocal of the other root?
(A) 2
(B) 3
(C) 4
(D) 5
115. If $\left(a + \frac{1}{a}\right) = 4$, find the value of $\left(a^2 + \frac{1}{a^2}\right)$.
(A) 12
(B) 14
(C) 16
(D) 18
116. Three groups of students drawn from three different schools comprising 120, 192 and 144 students are to be broken down into smaller teams such that each team comprises students from one group only and all the teams have equal number of students. Find the least number of total teams that can be formed.
(A) 13
(B) 14
(C) 19
(D) 22
117. Find the number of ways of distributing 5 identical balls into three boxes so that no box is empty and each box being large enough to accommodate all balls.
(A) 4
(B) 5
(C) 6
(D) 7
118. If there is threefold increase in all the sides of a cyclic quadrilateral, find the percentage increase in its area.
(A) 60%
(B) 180%
(C) 600%
(D) 800%

119. A boat running downstream covers a distance of 22 km in 4 hours, while for covering the same distance upstream, it takes 5 hours. Find the speed of the boat in still water.
- (A) 4.55 km/h
 - (B) 4.95 km/h
 - (C) 4.30 km/h
 - (D) 4.20 km/h
120. At his usual rowing rate, Amit can travel 12 miles downstream in a river in 6 hours less than it takes him to travel the same distance upstream. If he doubles his usual rowing rate for his 24-mile round trip, the downstream 12 miles would then take one hour less than the upstream 12 miles. Find the speed of the current in miles per hour.
- (A) $2\frac{1}{3}$ miles/h
 - (B) $2\frac{1}{4}$ miles/h
 - (C) $2\frac{2}{3}$ miles/h
 - (D) $2\frac{2}{5}$ miles/h