

ALL INDIA RPS OLYMPIAD 2020

(Organized by RPS Education Society Mahendergarh)

M.M. 60

Class 8th

Time: 60 Mins.

English (15)

1. Out of the four alternatives, choose the correct sentence.

- a) I don't like this kinds of dresses. b) She runs as faster as, if not faster than Shyam.
c) He came later than I. d) Gold is more precious than any metal.

2. Change the voice of the given sentence:

'I was obliged to do so.'

- (a) There was an obligation to do so. (b) Someone asked me to do so.
(c) Circumstances obliged me to do so. (d) They asked me to do so.

3. This door must be left shut at all times. What does the underlined auxiliary 'must' suggest?

- (a) Necessity (b) Determination
(c) Promise (d) Obligation

4. Choose the correct indirect form of the following sentence:

Rahul said to me, "We are mortal."

- (a) Rahul told me that they were mortal.
(b) Rahul told me that we are mortal.
(c) Rahul said to me that we all were mortal.
(d) Rahul said to me that he and I are mortal.

Direction: (Q-5) Choose the most appropriate option to fill in the blank.

5. Had the driver been careful, the accident _____ averted.

- (a) may have been (b) might have been
(c) will have been (d) can have been

6. By 2022, she _____ in films for ten years.
(a) has been working (b) will have been working
(c) had been working (d) has worked
7. An honorary degree was conferred _____ him.
(a) on (b) at (c) upon (d) for
8. She has strong antipathy _____ smoking.
(a) for (b) to (c) against (d) of
9. He _____ go there.
(a) needs (b) needs not (c) needn't (d) dares not

Direction: (Q10-11) In the following questions, out of the four alternatives, choose the correct meaning of the following idioms:

10. To put a good face on
(a) to smile graciously (b) to be lucky in business
(c) to bear up courageously (d) to treat others politely
11. An axe to grind
(a) difficult job (b) hard labour
(c) private ends to serve (d) punishment

Direction: (Q-12-13) Choose the most appropriate option.

12. A variety of pleasing objects _____ the eyes.
(a) charm (b) has charmed (c) charms (d) Both 'b' & 'c'
13. Which of the options given below is the correct indirect form of the given sentence?
He said, "You needn't wait"
(a) He said that he hadn't wait. (b) He said that I needn't wait.
(c) He said that I wouldn't wait. (d) Both 'b' & 'c'

Direction: (Q14 – 15) Select the option that carries the error part of given sentence.

14. Vikas said that he was going to (A) the library and wanted to (B) know that I could (C) accompany him. (D)
- (a) C (b) B (c) A (d) D
15. The storm was so furious (A) that the roofs of (B) many houses (C) were blew off. (D)
- (a) A (b) D (c) C (d) B

Mathematics (15)

16. If $x\%$ of y is equal to 1% of z , $y\%$ of z , is equal to 1% of x and $z\%$ of x is equal to 1% of y where $x, y, z > 0$ then the value of $xy + yz + zx$ is.
- (a) 1 (b) 2 (c) 3 (d) 4
17. A shirt costs ₹ $(a^2 - 3ab + b^2)$, a pair of trousers costs ₹ $(3a^2 - 6ab + 2b^2)$ and a pair of shoes costs ₹ $(2a^2 - 5ab + 4b^2)$. After buying two shirts, a pair of trousers and a pair of shoes, Brijesh gave ₹ $(5a + b)^2$ to the cashier. What balance will Brijesh receive back from the cashier?
- (a) ₹ $18a^2 + 27ab + 7b^2$ (b) ₹ $18a^2 - 20ab - 7b^2$
- (c) ₹ $18a^2 + 27ab - 7b^2$ (d) ₹ $18a^2 + 28ab - 9b^2$
18. **Statement-I:** If x^2 varies inversely as y and $x=9$ when $y=4$, then the value of y is $4/9$ when $x=27$.

Statement-II: In direct variation, the ratio between two given quantities remains constant.

- (a) Both Statement-I and Statement-II are true and Statement-II is the correct explanation of Statement-I.
- (b) Both Statement-I and Statement-II are true but Statement-II is not the correct explanation of Statement-I.
- (c) Statement-I is true but Statement-II is false.
- (d) Statement-I is false but Statement-II is true.

19. Factorise: $\left[\frac{1}{256}x^4y^4 - \frac{1}{8}x^2y^2z^2 + z^4 \right] - \left[\frac{1}{256}x^4y^4 + \frac{1}{8}x^2y^2z^2 + z^4 \right]$

- (a) $-\frac{1}{4}x^2y^2z^2$ (b) $8x^2y^2$ (c) $\frac{1}{2}x^2y^2z^2$ (d) $\frac{1}{3}x^2y^2z^2$

20. The difference between the outside and inside surfaces of a cylindrical metallic 14cm long pipe is 44cm^2 . If the pipe is made of 99 cubic cm of metal, find the sum of outer and inner radii of the pipe.

- (a) 1cm (b) 4.5cm (c) 2cm (d) 2.5cm

21. Solve for x : $\frac{0.7(x+0.3)}{0.28} - \frac{0.8(x-1.3)}{0.32} = x + 0.01$.

- (a) 1 (b) 0.5 (c) 0.3 (d) 3.99

22. If $\sqrt{86.49} + \sqrt{5+k^2} = 12.3$, then k is equal to

- (a) $\sqrt{10}$ (b) $\pm 2\sqrt{5}$ (c) $3\sqrt{5}$ (d) ± 2

23. The ratio of ages of A and B is 5:8. After 4 years the ratio of their ages is 7:10. The age of youngest of the both five years back was

- (a) 10 years (b) 5 years (c) 8 years (d) 11 years

24. How many non-overlapping triangles can we make in n-gon (polygon having n sides), by joining the vertices?

- (a) n-1 (b) n-2 (c) n-3 (d) n-4

25. The ratio of the sum of interior angles and number of sides of a polygon is 1080: 7.

Find the number of sides of the polygon.

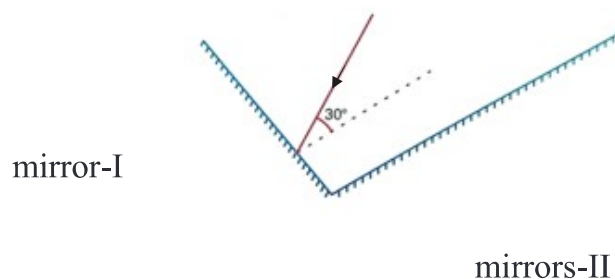
- (a) 10 (b) 14 (c) 12 (d) 20

26. If $64^a = \frac{1}{256^b}$, then $3a+4b$ equals.
- (a) 2 (b) 4 (c) 1 (d) 0
27. In a pie chart, a particular item had a section of 72° . If the pie chart is to be enlarged by 160%, then what will be the angle of the same item?
- (a) 62° (b) 144° (c) 100° (d) Remain same
28. A card is drawn from a well shuffled pack of 52 cards. If the probability of drawing a queen is $\frac{k}{26}$, then find k.
- (a) 2 (b) 3 (c) 1 (d) 0
29. Find the value of $\frac{\sqrt{59.29} - \sqrt{5.29}}{\sqrt{59.29} + \sqrt{5.29}}$.
- (a) 1.54 (b) 1.85 (c) 5.4 (d) 0.54
30. If $p + \frac{1}{p} = \sqrt{6}$. then find the value of $p - \frac{1}{p}$.
- (a) $\sqrt{3}$ (b) 3 (c) 2 (d) $\sqrt{2}$

Science (15)

31. Two mirrors meet at right angle. A ray of light is incident on one at an angle of 30° as shown in figure. This ray undergoes multiple reflection. Then what will be the angle of reflection from the second mirror?

- a) 30°
 b) 60°
 c) 90°
 d) 45°



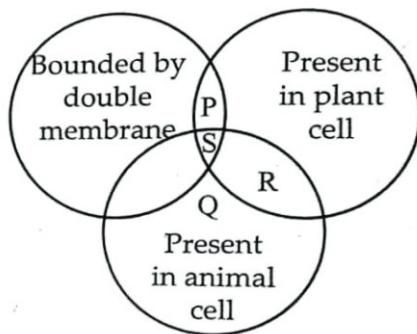
32. When an ebonite rod is rubbed against a piece of flannel cloth, the rod _____
- (a) becomes positively charged while the cloth has a negative charge.
(b) and the cloth both acquire positive charge.
(c) becomes negatively charged while the cloth has a positive charge.
(d) and the cloth both acquire negative charge.
33. The force of friction between two bodies in _____.
- (a) parallel to the contact surface (b) perpendicular to the contact surface
(c) inclined at 30° to the contact surface (d) inclined at 60° to the contact surfaces
34. A dog barks in a park and hears its echo after 0.5 seconds. If the sound of its bark got reflected by a nearby building. The speed of sound in air is 346 m/s. The distance between the dog and the building is _____.
- (a) 86.5m (b) 80.6m (c) 75m (d) 8.65m
35. What does the surface of a metal turn into when it corrodes?
- (a) A compound. (b) A mixture. (c) An element. (d) An atom.
36. Match the items given in column A with those given in column B.

Column A

Column B

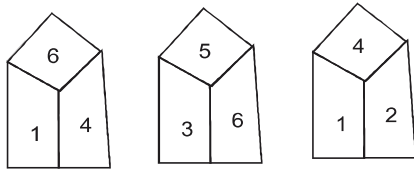
- (P) present in natural gas (i) CO_2
(Q) Carbon dioxide gas (ii) CH_4
(R) present in chalk, marble and limestone (iii) Carbon and Oxygen
(S) Used as 'dry ice' (iv) Obtained by heating sodium bicarbonate
- (a) P-ii, Q-iv, R-iii, S-i
(b) P-ii, Q-iii, R-iv, S-i
(c) P-iii, Q-i, R-iv, S-ii
(d) P-ii, Q-i, R-iv, S-iii

42. Select the incorrect statement regarding AIDS_____
- (a) It is an immunodeficiency disease.
 (b) HIV virus has RNA as its genetic material.
 (c) Aids can be transmitted to an infant from the infected mother through her milk.
 (d) The time –lag between the infection and appearance of AIDS symptoms may vary from week to month.
43. Cretinism and myxoedema are due to_____
- (a) hypersecretion of growth hormone. (b) hyopsecretion of growth hormone.
 (c) hypersecretion of thyroxine. (d) hyopsecretion of thyroxine.
44. Identify P, Q, R and S in the given Venn diagram and select the incorrect option regarding them.



- (a) P could be a colourless organelle that helps to store reserve food in the form of lipids, carbohydrates and proteins.
 (b) Q could be an organelle that is involved in formation of spindle during cell division.
 (c) R could be an organelle that contains genetic material organised as DNA along with proteins to form chromosomes.
 (d) S could be an organelle that produce energy currency of the cell, ATP through cellular respiration.
45. Arrange the cell organelles useful for intracellular digestion, intracellular respiration, intracellular movements and cell secretion in a sequence.
- P. Golgi complex Q. Lysosome
 R. Mitochondria S. Microtubules
- (a) Q-R-S-P (b) R-Q-P-S (c) S-P-Q-R (d) P-S-R-Q

Aptitude (15)

46. Find the missing term in the following series.
4, 7, 12, 19, 28, ?
a) 30 b) 36 c) 39 d) 48
47. Onion is to bulb as ? is to leaf.
a) plant b) Flower c) Thorn d) Lettuce
48. Which is the one that does not belong to that group?
a) Probe b) Exploration c) Deliberation d) Investigation
49. If ZIVFEP means VERBAL in a particular language code, then which of the following is a valid word in this code?
a) ETXMXIYH b) ETXMXHYI c) ETXMXYIH d) ETGMGYIH
50. Pointing shaan, Nada said, "His brother's father is the only son of my grandfather." How is Nada related to shaan?
a) Daughter b) Sister c) Mother d) Niece
51. After walking 6 km I turned right and covered a distance of 2 km, then turned left and covered a distance of 5 km. In the end I was moving towards the north. In which direction did I start the journey?
a) North b) South c) East d) West
52. How many 7's immediately preceded by 6 but not immediately followed by 4 are there in the following series.
7 4 2 7 6 4 3 6 7 5 3 5 5 7 8 4 3 7 6 7 2 4 0 6 7 4 3
a) One b) Two c) Four d) Six
53. Three position of a dice are given. Based on them find out which number is found opposite the number 2 in the given cube.
a) 1
b) 5
c) 3
d) 6
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54. If it was Saturday on 17th December 2009. What will be the day on 22nd December 2012?
a) Sunday b) Tuesday c) Friday d) Monday

55. The rotation undergone by the minute hand of a clock as it traverses a distance of 255 minutes is:
 a) 810 degree b) 1530 degree c) 450 degree d) 90 degree

56. Choose the correct venn diagram for the following question.

Anxiety, Intelligence, Strength



(a)



(b)



(c)



(d)

57. **Statement:** Some eyes are ears. Some ears are hands.

Conclusion: I. No hand is an eye.

II. Some eyes are hands.

- a) If only conclusion I follows. b) If only conclusion II follows.
 c) If either conclusion I or II follows. d) If neither conclusion I nor II follows.
58. A clock is set right at 5 a.m. The clock loses 16 minutes in 24 hours. What will be the right time when the clock indicates 10 p.m. on the 4th day?
 a) 8pm b) 9pm c) 10pm d) 11pm
59. In the Olympic games, the flags of six nations were flown on the masts in the following way:
 The flag of America was to the left of Indian tricolour and to the right of the flag of France. The flag of Australia was on the right of the Indian flag but was to the left of the flag of Japan, which was to the left of the flag of China. Find the two flags which were in the centre.
 a) India and Australia b) America and India
 c) Japan and Australia d) America and Australia
60. Find the missing number:

- a) 16
 b) 63
 c) 0.64
 d) 0.63

0.5	4	8
7	8.4	1.2
0.7	?	0.9