

ALL INDIA RPS OLYMPIAD 2020

(Organized by RPS Education Society Mahendergarh)

M.M. 60

Class 7th

Time: 60 Mins.

English (15)

1. Which of the following alternatives has the three degrees of the adjective in their correct forms?

- (a) holy, more holy, most holy (b) slim, more slim, most slim
(c) wealthy, more wealthy, most wealthy (d) sad, sadder, saddest

Direction (Q.2-5) Choose the most appropriate option to fill in the blank.

2. Delhi is _____ from Alwar than Jaipur.

- a) farther b) further
c) farthest d) None of these

3. He _____ this building for the last ten years when he sold it.

- a) has been owning b) had been owning
c) had owned d) has owned

4. The ship will have left before we _____ the harbour.

- a) shall reach b) reach
c) reaches d) reached

5. John ordered _____ a cup of tea.

- a) for b) to
c) of d) None of these

6. Direction- (Q 6-7) Change the voice of the given sentence:

‘You must never say that he was ungenerous.’

- (a) Don’t say that he was ungenerous.
(b) He was ungenerous is not said by you.
(c) It must never be said that he was ungenerous.
(d) You must never say that he was being ungenerous.

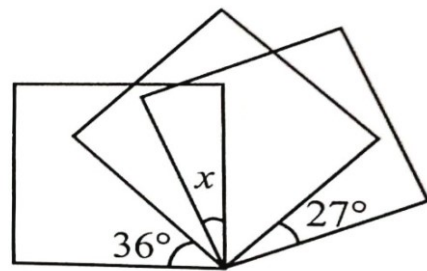
7. 'I remember my sister taking me to the museum.'
- (a) I remember taken to the museum by my sister.
(b) I remember myself being taken to the museum by my sister.
(c) I remember I was taken to the museum by my sister.
(d) I remember being taken to the museum by my sister.
8. _____! This is disgraceful.
- (a) Ah (b) Alas (c) Fie (d) Hurrah
- Direction: (Q-9-10) Use the correct question tag for the following.
9. Either of you is innocent, _____?
- (a) aren't you (b) is he (c) are you (d) do you
10. Let's play a trick on him, _____?
- (a) do we (b) will you (c) won't you (d) shall we
11. No boy and no girl _____ present there.
- (a) was (b) were (c) are (d) Both 'b' & 'c'
12. The question word for all possessive forms, such as possessive nouns, possessive pronouns and possessive adjectives, is
- (a) what (b) whom (c) whose (d) where
13. Which of the options given below is the correct indirect form of the given sentence?
"I don't know the way. Do you?" he asked.
- (a) He said that he didn't know the way and did I know it.
(b) He told that he was not knowing the way, but wondered if I knew.
(c) He said that he didn't know the way and asked me if I did.
(d) He asked me if I knew the way which he didn't.
- Direction: (Q14-15) Out of the four alternatives, choose the correct sentence.
14. (a) No sooner he saw me than he ran away.
(b) No sooner he did see me than he ran away.
(c) No sooner he did saw me than he ran away.
(d) No sooner did he see me than he ran away.

15. (a) I proposed to the villagers that we should help the poor.
 (b) The children suggested that they should play together.
 (c) The principal asked the student where he had been the previous day.
 (d) All are correct.

Mathematics (15)

16. If $x + \frac{1}{x} = a$ and $x - \frac{1}{x} = b$ then $a^2 - b^2 =$
 (a) 4 (b) 3 (c) 2 (d) 5
17. The diagonal of a square A is $(x+y)$. The diagonal of square B with twice the area of A is.
 (a) $2(x+y)$ (b) $x+2y$ (c) $\sqrt{2}(x+y)$ (d) $2x+4y$
18. The given figure shows three identical squares. Find x .

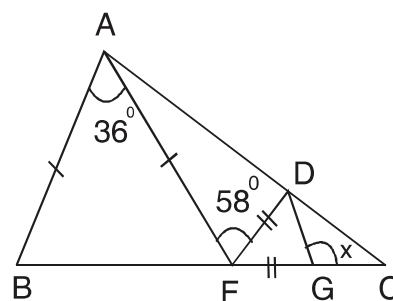
- (a) 30°
 (b) 27°
 (c) 36°
 (d) 16°



19. Two numbers m and n are in ratio $\frac{3}{8} : \frac{5}{3}$ respectively. By what percent is n more than m ?
 (a) 344.44% (b) 444.44% (c) 324.56% (d) 424.56%

20. In the figure, find $\angle x$

- (a) 120°
 (b) 110°
 (c) 115°
 (d) 125°

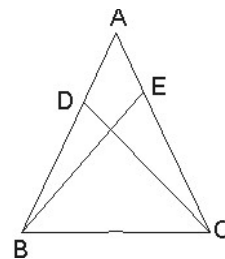


21. Assertion: The cost of a chair is ` x and the cost of cupboard is ` 90. If the total cost of 4 chairs and a cupboard is `200, then the cost of chair is ` 30.

Reason: $4x+90=200$ is the required equation of the above statement.

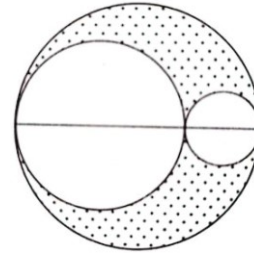
- (a) Both assertion and reason are true and reason is the correct explanation of the assertion.
(b) Both assertion and reason are true but reason is not the correct explanation of assertion.
(c) Assertion is true but reason is false.
(d) Assertion is false but reason is true.
22. The median, mode and mean of a data is 9. If there are five integers in the data and the range of the data is 4. If the least value of the data is 7, then find the number of different observations in the data.
(a) 3 (b) 4 (c) 2 (d) 5
23. There are same number of coins on the table one fourth of which are showing heads. If I turn over two coins, one third of them show heads. How many coins are there on the table?
(a) 22 (b) 24 (c) 6 (d) 28
24. My grandfather was 8 times older to me 16 year ago. He would be 3 times of my age 8 years from now. Eight years ago, what was the ratio of my age to that of my grandfather?
(a) 11:53 (b) 1:5 (c) 3:8 (d) 4:5
25. If ABC is an isosceles triangle with $AB= AC$ and $AD=AE$, than which of the following is true?

- (a) $BD=CE$
(b) $BE=CD$
(c) Both 'a' and 'b'
(d) None of these



26. A sum of money at simple interest amounts to ₹815 in 3 years and to ₹854 in 4 years. The sum is
(a) ₹650 (b) ₹690 (c) ₹698 (d) ₹700

27. Two circles are drawn inside a big circle with diameters $\frac{2}{3}rd$ and $\frac{1}{3}rd$ of the diameter of the big circle as shown in figure. Find the area of shaded portion, if the length of the diameter of the circle is 18cm.

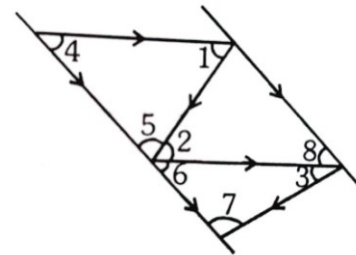


- (a) $46\pi \text{ cm}^2$
 (b) $9\pi \text{ cm}^2$
 (c) $6\pi \text{ cm}^2$
 (d) $36\pi \text{ cm}^2$
28. The price of an article was increased by $r\%$ Later the new price was decreased by $r\%$. If the latest price is ₹1, then the original price is

- (a) ₹1 (b) ₹ $\left(\frac{1-r^2}{100}\right)$ (c) ₹ $\frac{\sqrt{1-r^2}}{100}$ (d) ₹ $\frac{10000}{10000-r^2}$

29. Which of the following option is incorrect?

- (a) $\angle 1 = \angle 3$
 (b) $\angle 1 + \angle 4 + \angle 5 = 180^\circ$
 (c) $\angle 8 = \angle 6$
 (d) $\angle 1 = \angle 8$



30. $\frac{2 \times 2^{n+3}}{2^{n+4} - 2^3 \times 2^n} + 2^2$ is equal to

- (a) 12 (b) 18 (c) 4 (d) 6

Science (15)

31. In an electrical circuit three incandescent bulbs A, B and C of rating 40 W, 60 W and 100 W respectively are connected in parallel to an electric source. Which of the following is likely to happen regarding their brightness?

- (a) Brightness of all the bulbs will be the same.
 (b) Brightness of bulb A will be the maximum.
 (c) Brightness of bulb B will be more than that of A.
 (d) Brightness of bulb C will be less than that of B.

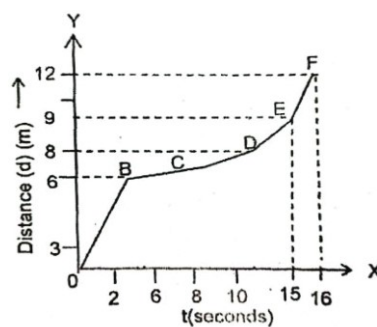
32. Which of the following phenomena of light are involved in the formation of a rainbow?
- Reflection, refraction and scattering.
 - Refraction, dispersion and interference.
 - Refraction, dispersion and internal reflection.
 - Dispersion, scattering and total internal reflection.
33. A $10^{\circ}C$ fall in temperature is equal to _____.
- $10^{\circ}F$ fall in temperature
 - $18^{\circ}F$ fall in temperature
 - $10^{\circ}F$ rise in temperature
 - $18^{\circ}F$ rise in temperature
34. The motion of a body is depicted graphically as shown in the figure, then the average speed of the body is _____ ms^{-1} .

(a) $\frac{3}{4}$

(b) $\frac{9}{8}$

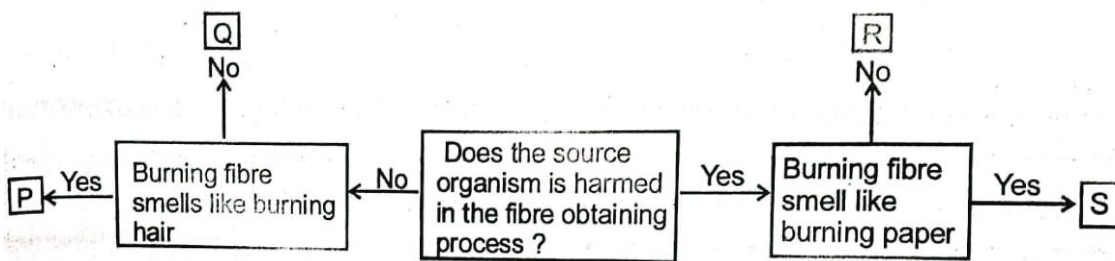
(c) $\frac{4}{3}$

(d) $\frac{8}{9}$

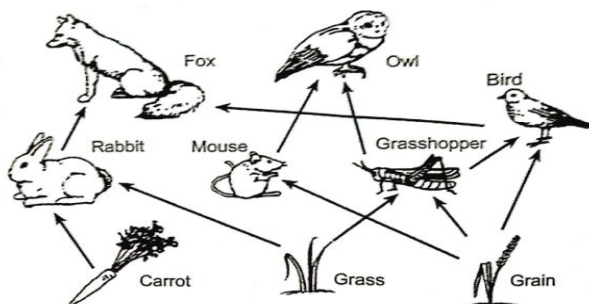


35. During the formation of rain. When water vapours change back to liquid in the form of rain drops.
- Heat is absorbed
 - Heat is released
 - Heat is first absorbed and then released
 - There is no exchange of heat
36. Solid calcium oxide reacts vigorously with water to form calcium hydroxide accompanied by liberation of heat. This process is called slaking of lime. Calcium hydroxide dissolves in water to form its solution called lime water. Which among the following is (are) true about slaking of lime & solution formed?
- It is an endothermic reaction.
 - It is an exothermic reaction.
 - The PH of the resulting solution will be more than seven.
 - The PH of the resulting solution will be less than seven.
- (i) & (ii)
 - (ii) & (iii)
 - (i) & (iv)
 - (iii) & (iv)

37. If a few drops of a concentrated acid accidentally spills over the hand of a student, what should be done?
- Wash the hand with saline solution.
 - Wash the hand immediately with plenty of water & apply a paste of sodium hydrogencarbonate.
 - After washing with plenty of water, apply solution of sodium hydroxide on the hand.
 - Neutralise the acid with a strong alkali.
38. Refer the given flowchart & select the option that correctly identifies the fibres P,Q, R & S.

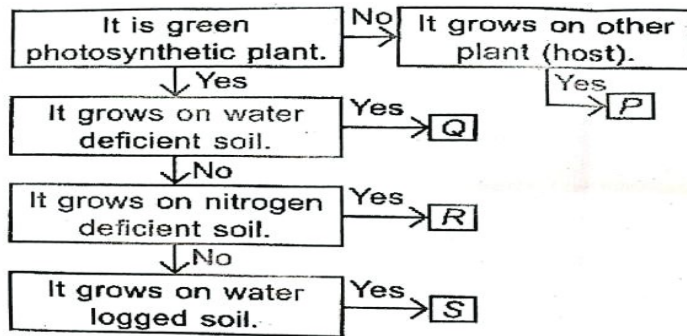


- P- Wool, Q- Silk
 - R- Wool, S- Silk
 - P- Wool, R- Silk
 - Q- Jute, S- Coconut.
39. Which of the following statement is incorrect:
- Thermometer is read by holding its bulb
 - A few sharp jerk are given to clinical thermometer before using it.
 - The Black fabric tent is preferred during winter.
 - Shopkeepers selling ice blocks usually cover them with jute Sacks.
40. How many food chains are there in the given food web?



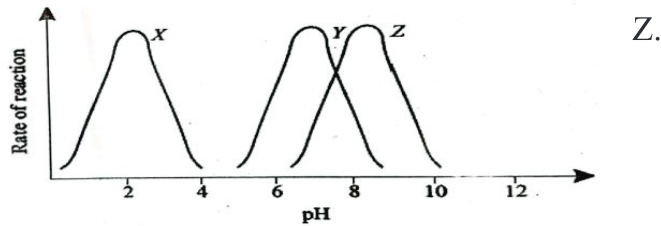
- 7
- 5
- 8
- 10

41. Refer to the given flow chart and select the correct option regarding P, Q, R and S.



- (a) Plant P derives nutrition from the host plant with the help of haustoria and possesses hygroscopic roots which absorb moisture directly from atmosphere.
- (b) Plant Q possesses broad thin leaves with superficial stomata.
- (c) Plant R possesses special leaf modifications to catch and digest insects.
- (d) Plant S possesses stilt roots which help in aeration.
42. Select the incorrect Statement (s)
- (i) Plasma is the fluid part of the blood.
- (ii) Like humans, sponges also possess kidneys for the process of excretion.
- (iii) Water is absorbed by the root hairs of plants by the process of diffusion.
- (iv) Our skin possesses sweat glands.
- (v) Capillaries are present inside tissues of our body.
- (a) only (ii) (b) only (v) (c) only (iii) (d) (ii) & (iii)
43. Shruti planted many plants belonging to two separate species 'x' & 'y' in her garden. She watered them regularly & took proper care of them. Plants of both species flowered. After some time Shruti noticed that only plants belonging to species 'x' are yielding fruits whereas fruit setting was absent in plants of species 'y'. What could be the probable reason for this?
- (a) Plants of species 'x' are wind pollinated but plants of species 'y' are insect pollinated.
- (b) Species 'x' is dioecious whereas species 'y' is monoecious.
- (c) Plants of species 'y' present in Shruti's garden are dioecious male plants.
- (d) plants of species 'x' bear only unisexual female flower whereas plants of species 'y' bear bisexual flowers.

44. Refer to the given graph which shows the effect of PH on the activities of three enzymes X, Y &



The three enzyme sample. X, Y & Z are taken from which parts of the human alimentary canal?

- | X | Y | Z |
|--------------|----------|----------|
| (a) duodenum | Mouth | Stomach |
| (b) Mouth | Stomach | Duodenum |
| (c) Stomach | Duodenum | Mouth |
| (d) Stomach | Mouth | Duodenum |
45. The correct sequence of anaerobic reactions in yeast is _____
- (a) Glucose Cytoplasm Pyruvate Mitochondria Ethanol+ CO₂.
- (b) Glucose Cytoplasm Pyruvate Cytoplasm Lactic acid.
- (c) Glucose Cytoplasm Pyruvate Mitochondria Lactic acid+ CO₂.
- (c) Glucose Cytoplasm Pyruvate Cytoplasm Ethanol+ CO₂.

Aptitude (15)

46. Choose the best alternative for the given analogy.
- 6 : 222 :: 7 : ?
- a) 210 b) 336 c) 343 d) 350
47. Choose the odd one out.
- a) Srilanka b) Cuba c) Java d) Malaysia
48. In a certain code, STOVE is written as 'FNBLK', then how will 'VOTES' be written in the same code?
- a) FLKBN b) LBNKF c) LKNBF d) LNBKF
49. Pointing to Uday, Ranju said, "He is the son of my father's only son." How is Uday's mother related to Ranju?
- a) Daughter b) Sister-in-law c) Aunt d) None of these

50. It is 3 O'clock in a watch. If the minute hand points towards the North-East, then the hour hand will point towards the
 a) South b) South-West c) North-West d) South-East
51. If the 25th of August in a year is Thursday, the number of Monday in that month will be
 a) 3 b) 4 c) 5 d) 6
52. How many degrees does the minute hand covers, in the same time in which the second hand covers 180°?
 a) 18° b) 6° c) 10° d) 3°
53. How many times between 3 o'clock to 7 o'clock, the minute hand and hour hand of a clock makes angle 180°.
 a) 3 b) 4 c) 5 d) 2

Direction (54) Choose the figure that shows best relationship between the items given.

54. Musician, Men, Women



55. If + means '-', - means '÷', ÷ means '×', and × means '+', what is the value of $125-5\times 10\div 13+28=?$
 a) 129 b) 127 c) 149 d) 150
56. A, B, C, D and E are five friends. A is shorter than B but taller than E. C is the tallest. D is shorter than B and taller than A. Who has two persons taller and two persons shorter than him/her?
 a) A b) B c) C d) D

57. Find the missing character in the given figure.

3	6	8
5	8	4
4	7	?

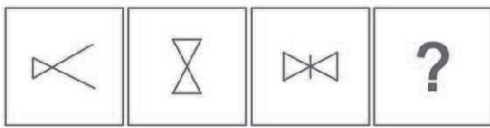
- a) 7 b) 8 c) 9 d) 6
58. Complete the series with finding missing letter.

A, I, P, V, A, E, ?

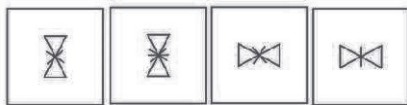
- a) G b) H c) E d) F

59. Complete the series.

Question Figure



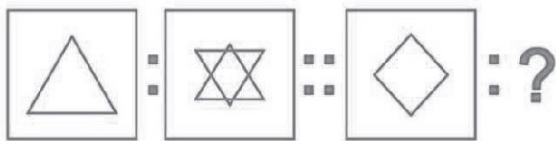
Answer Figure



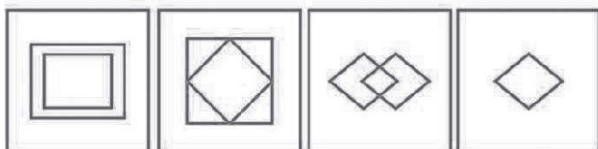
(A) (B) (C) (D)

60. Complete the figure analogy

Question Figure



Answer Figure



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