MATHS

BOOKS - UNITED BOOK HOUSE

QUESTION PAPER 2019

Exercise

1. Choose the correct option in each case from the following questions : In a partnership business, the ratio of share of profit of two

friends is 1/2 : 1/3, then the ratio of their principal is ____

A. 2 : 3

B. 3 : 2

C. 1 : 1

D. 5 : 3

Answer:

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2. If p + q = $\sqrt{13}$ p - q = $\sqrt{5}$ then the value of pq is ____

A. 2

B. 18

C. 9

D. 8

Answer:

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3. O is the centre of a circle and AB a diameter ABCD is acyclic quadrilateral. $\angle DAC = 40^\circ$, the the measure of $\angle BCD$ is ____

A. 75°

B. 105°

C. 115°

D. 80°

Answer:

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4. If $\tan\alpha + \cot a = 2$, then the value of $\tan^{13}\alpha + \cot^{13}\alpha$ is____

A. 13

B. 2

C. 1

D. 0

Answer:

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5. If two cubes of length of each side $2\sqrt{6}$ cm are placed side by side, then the length of the diagonal of the cuboid so produced is ___

A. 10 cm

B. 6 cm

C. 2 cm

D. 12 cm.

Answer:

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6. The mean of the date

A. 20

B. 24

C. 40

D. 10

Answer:

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7. A person deposited ₹. 100 in a bank and gets the amount ₹. 121 after two years. The rate of compound interest is _____%

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8. If the product and of two quadratic surds is a rational number, then surds are _____ surd.

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9. If the bases of two triangles are situated on same line and the other vertex of the two triangles are common, then the ratio of the areas of two triangles are _____to the ratio of their bases.

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10. The simplest value of $\frac{\cos 53^\circ}{\sin 37^\circ}$ is _____

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11. Number of surface of a solid right circular cylinder is _____.

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12. The variables srideepa and tasmir can be fused to give rise to another variable aneesh, with the relation

$xy = z$

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13. Write Ture or False (Any five) The difference between the simple interest and the compound interest of ₹. 100 in 1 year at the rate of 10% p.a is Re. 1.

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14. True or false: The compound ratio of $ab:c^2$,$bc:a^2$ and $ca:b^2$ is 1 : 1.

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15. Only one circle can be drawn through three non-colinear points.

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16.

$True$ or $false$: $\sin 30^\circ + \sin 60^\circ > \sin 90^\circ$.

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17. Find The ratio of the volume of aright circular cone and a right circular cylinder with same base and height.

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18. True or false: Value of median of data 2, 3, 9, 10, 9, 3, 9 is 10.

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19. Answer the following questions : Find the capital which given Re. 1 as interest per month at 5% rate of interest per annum.

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20. In a partnership business the ratio of capitals of three men is 3 : 5 : 8. The share of profit of the first member is ₹. 60 less then that of the third member, then what is the total profit in the business?

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21. If a/2 = b/3 = c/4 = 2a-3b+4c/p, then find p.

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22. $x \propto y^2$ and y = 2a when x = a, then show that $y^2 = 4ax$.

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23. In a trapezium ABCD, BC AD and AD = 4 cm. the two diagonals AC and BD intersect at the point O in such a way that AO/OC = DO/OB = 1/2. Calculate the length of BC.

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24. Two chords AB and AC of a circle are mutually perpendicular to each other. If AB = 4 cm and AC = 3 cm, find the length of the radius of the circle.

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25. In $\triangle ABC, \angle ABC = 90^\circ$ and BD bot Ac`, if AB = 5 cm, BC = 12 cm, then find the length of BD.

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26. Find the value/values of $\theta(0^\circ \leq \theta \leq 90^\circ)$ for which $2\sin\theta\cos\theta = \cos\theta$.

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27. If $\sin 10\theta = \cos 8\theta$ and 10θ is a positive acute angle, then find the value of $\tan 9\theta$.

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28. The length breadth and height of a cuboidal room be a unit, b unit, and c unit respectively and a + b + c = 25, ab + bc +ca = 240.5 then find the length of the longest rod to be ket inside the room.

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29. The area of curved surface of a right circular cone is $\sqrt{5}$ times that of the base of the cone, find the fatio of the height and the radius of the base of the cone.

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30. The mid value of first (2n + 1) consecutive natural number is n + 103/3 Find the value of n.

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31. If interest is compounded half yearly what will be the compound interest and amound on ₹. 8,000 at the rate of 10% compound interest per annum for 1 1/2 years?

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32. Tow friends start a partnership business investing ₹. 40,000 and ₹. 50,000 respectively. There is an agreement between them that

50% of the profit will be divided equal and rest amount of profit will be distributed between them in the ratio of their principal. If the share of profit of 1 st friend is ₹. 800 less than that of the 2nd friend, find the share of profit of the 1 st friend.

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33. Answer any One question : Determine the equation whose roots are the square of the roots of the equation x^2 + x + 1 = 0.

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34. If the price of 1 dozen pen is reduced by ₹. 6, then 3 more pens will be got in ₹. 30. Calculate the price of 1 dozen pen before the reduction of price.

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35. Answer any One question : Simplify :

$$\frac{4\sqrt{3}}{2-\sqrt{2}} - \frac{30}{4\sqrt{3}-\sqrt{18}} - \frac{\sqrt{18}}{3} - \sqrt{12}\Bigg).$$

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36. If $\left(\frac{1}{x}-\frac{1}{y}\right) \propto \frac{1}{x-y}$,then show that $\left(x^2+y^2\right) \propto xy$.

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37. Answer any One question : If (3x - 2y) : (x + 3y) = 5 : 6, then find the value of (2x + 5y) : (3x + 4y).

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38. If b+c-a/x+y-x = c+a-b/c+x-y = a+b_c/x+y-z, then prove that a/x = b/y = c/z.

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39. Answer any One question : prove that semicirular angle is a right angle.

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40. If two circles touch each other externally then the point of contact will on the line-segment joining the two centers___prove it.

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41. Answer any One question : If a quadrilateral ABCD is circumscribed about a circle with centre O, prove that AB + CD = BC + DA.

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42. If in ABC,A is right angle and BP and CQ are two medians, then prove that 5 BC^2 = 4 $(BP^2 + CQ^2)$.

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43. Answer any One question : Draw a triangle ABC of which BC = 7 cm, AB = 5 cm and AC = 6 cm. Then draw the circumcircle of $\triangle ABC$. (Oniy traces of construction are required)

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44. Answer any One queation : Construct two circles of radii 4 cm and 2 cm and the distance between their centres is 7 am. Construct a direst common tangent of the circles. (Only traces of contruction are required).

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45. Answer any Two questions : In $\triangle ABC \angle C = 90^\circ$, If BC = m and AC = n then

prove that m $\sin A + n \sin B = \sqrt{m^2 + n^2}$

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46. Find the value of 1^3

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47. If $\angle P + \angle Q = 90^\circ$ then show that $\frac{\sqrt{\sin P}}{\cos Q} - \sin P \cos Q = \cos 2P.$

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48. Answer any One question : From a quay of a river, 600 metres wide, two boats start in two different directions to reach the opposite side of the river. The first boat moves making an angle of 30° with this bank and the second moves making an angle 90° with direction of the first boat. What will be the distance between the two boats when both of them reach the other side?

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49. The length of the flag post at the roof of a three storied building is 3.6 metre. The angles of elevation of the top and foot of the post are 50° and 45° respectively from a point on the road. Find the height of the building. [Take $\tan 50^\circ = 1.2$]

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50. Answer any two questions : If 64 buckets of water is withdrawn from a cubical water tank, full of water, then 1/3 of water in the tank still

remains. If the length of the side of the water tank is 1.2 metre than what is the capacity (in litre) of each bucket? (1 cubic decimeter = 1 litre)

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51. The diameter of cross-section of a wire is reduced by 50%. If the volume remains constant, what percent of length of the wire should be increased?

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52. 77 sq m tripal is required to make a right circular conical tent. If the slant height of the tant is 7 m then what is the area of the base of the tent?

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53. Answer any two questions : If the arithmetic mean of the following frequency distribution table is 54, then find the value of

x :

Class	0-20	20-40	40-60	60-80	80-100
Frequency	16	14	24	26	x

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