

उत्तरपुस्तिकामा प्रश्नपत्रको KEY अनिवार्यरूपले उल्लेख गर्नुपर्नेछ । KEY उल्लेख नगरेमा उत्तरपुस्तिका रद्द हुनेछ ।
परीक्षामा Mobile, Calculator, Smart Watch आदिको प्रयोग गर्न पाइने छैन ।

- Contour lines of different elevations cannot merge or cross except in the case of :
A) A vertical cliff B) A ridge C) A valley D) An overhanging cliff
- The dimension of a pond is 50m x 40m at the surface of the ground. The pond is 4m deep and the side slope is 2:1(H:V). The volume of excavation of the pond using prismoidal formula is : $\frac{1}{6}(A_1 + A_2 + 4A_m) \times h$
A) 5632 m³ B) 5461 m³ C) 5320 m³ D) 4288 m³
- Which material is most susceptible to acid attack :
A) Granite B) Slate C) Basalt D) Marble
- The main alloying element in stainless steel is :
A) Nickel B) Carbon C) Manganese D) Chromium
- The efflorescence in bricks is caused by the presence of :
A) Alumina B) Silica C) Alkaline salts D) Iron oxide
- Which acid is applied to the metallic surface before the application of paints to prevent corrosion?
A) Sulphuric acid B) Nitric acid C) Phosphoric acid D) Carbonic acid
- Which of the following correctly describes the behavior of a soil with a high plasticity index (PI more than 35) and a liquidity index (LI) greater than 1?
A) The soil is in a semisolid state with high shear strength
B) The soil behaves like a liquid and has negligible shear strength
C) The soil is a plastic and can be easily rolled into thin threads
D) The soil is brittle and cracks upon bending
- Which of the following is not a local construction material?
A) Stone B) Rivers bed material C) Mud D) Cement
- Which of the following properties of concrete is affected by the alkali-silica reaction?
A) Workability B) Density C) Volume stability D) Setting time
- After the pre-stressing process is completed, a loss of stress is due to :
A) Shrinkage of concrete B) Elastic shortening of concrete
C) Creep of concrete D) Creep of steel
- The characteristic compressive strength of concrete is defined as the strength below which not more than..... % of test results are expected to fall :
A) 5 B) 10 C) 15 D) 20
- The diameter of the Vicat plunger is 10 mm and its length varies from :



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- A) 20mm to 30mm B) 30mm to 40mm C) 40mm to 50mm D) 50mm to 60mm

13. Which of the following losses in pre-stress occurs only in post-tensioning not in pre-tensioning?

- A) Elastic shortening of concrete B) Shrinkage of concrete
C) Friction loss D) Creep of concrete

14. Soils formed by the deposition of sediments carried by rivers is called :

- A) Colluvial soil B) Aeolian soil C) Alluvial soil D) Black cotton soil

15. Rise of water table in cohesionless soils up to the ground surface reduces the net ultimate bearing capacity approximately :

- A) 25% B) 50% C) 75% D) 90%

16. Which type of water in soil is held tightly by electrostatic forces and cannot be removed by gravity of plant roots?

- A) Capillary water B) Gravitational water C) Hygroscopic water D) Free water

17. Which of the following is not an index property of soil?

- A) Liquid limit B) Plastic limit C) Permeability D) Shrinkage limit

18. The dip of a rock layer is the angle measured from the horizontal :

- A) Vertically downward B) Along the strike direction
C) Parallel to the fold axis D) Perpendicular to strike



19. Which tunneling method is most suitable for soft ground with water level above the tunnel crown?

- A) Drill and blast method B) Shield tunneling method
C) NATM (New Australian Tunneling Method) D) Cut and cover method

20. If for a given activity, the optimistic time (t_o), pessimistic time (t_p) and most likely time (t_m) estimates are 7, 13 and 10 days respectively then what would be the expected time in PERT analysis?

- A) 8 days B) 9 days C) 10 days D) 15 days

$$\frac{t_o + 4t_m + t_p}{6}$$

21. The 'Earned Value' (EV) of a project is defined as :

- A) Actual cost of work performed B) Budgeted cost of work scheduled
C) Budgeted cost of work performed D) Planned value at completion

22. The difference between the maximum time available and the actual time needed to perform an activity is known as :

- A) Free float B) Independent float C) Total float D) Half float

23. If the amount of variation is in between 10-15% of the original contract value, then the approval of variation order is done by :

- A) Project manager B) Site incharge
C) Head of the department D) Secretary of the concerned ministry

24. Resource leveling is done to :

- A) Increase concrete strength B) Avoid resource fluctuation
C) Reduce drawings D) Increase span

25. The temporary structure erected to increase the size of opening in an existing wall is :

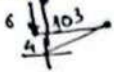
- A) Safety shore B) Inclined shore C) Horizontal shore D) Dead shore

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69. Krishna walks 10 km towards north. From there he walks 6 km towards south. Then he walks 3 km towards east. How far and in which direction he is with reference to his starting point?

- A) 5 km West
- B) 5 km North-East
- C) 7 km East
- D) 7 km West



70. Find the suitable word which would replace the question mark as given below :

Around: Across, \odot Change: Alteration, Impact: ?

- A) Disregard
- B) Evasion
- C) Brunt
- D) Prevent

71. In the given statement relationship between different elements are shown and two conclusions are derived. Based on the given information choose the correct answer accordingly :

Statement: Pramod is older than Kumar, Kumar is younger than Rahul and Rahul is younger than Saugat.

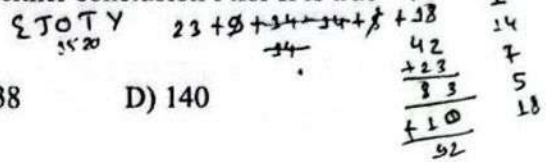
Conclusion I: Rahul is younger than Pramod

Conclusion II: Saugat is younger than Kumar.

- A) Only conclusion I is true
- B) Only conclusion II is true
- C) Both conclusions I and II are true
- D) Neither conclusion I nor II is true

72. If WINNER = 92, then CHANGER is?

- A) 128
- B) 132
- C) 138
- D) 140



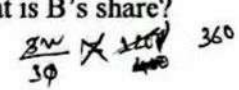
73. Complete the following matrix :

R	E	S	T
C	O	L	D
S	N	O	W
B	?	P	?

- A) FA
- B) EF
- C) EA
- D) DA

74. A sum of Rs. 1,200 is divided among A, B and C in the ratio 2:3:5. What is B's share?

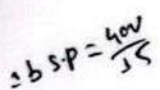
- A) Rs. 240
- B) Rs. 320
- C) Rs. 360
- D) Rs. 400



75. 125:5 :: 216: ?

- A) 4
- B) 5
- C) 6
- D) 7

76. X, Y and Z started a business in partnership, investing in the ratio of 5:6:13, respectively. At the end of the year, they earned a profit of Rs. 36,400 which is 14% of their total investment. What was the total investment in the business?



- A) Rs. 2,40,000
- B) Rs. 2,50,000
- C) Rs. 2,60,000
- D) Rs. 2,75,000

77. On selling 15 balls at Rs. 400, there is loss equal to cost price of 5 balls. The cost price of a ball is :

- A) Rs. 20
- B) Rs. 30
- C) Rs. 40
- D) Rs. 50

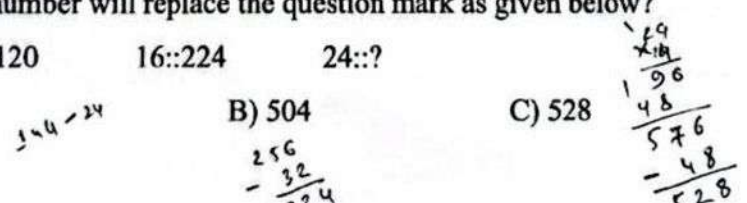
78. Sales executive gets commission on total sales at 8%. If the sale is exceeded Rs. 10,000 he gets an additional commission as a bonus of 4% on the excess of sales over Rs. 10,000. If he gets the total commission of Rs. 950, then the bonus he received is :

- A) Rs. 36
- B) Rs. 48
- C) Rs. 50
- D) Rs. 54

79. Which number will replace the question mark as given below?

12::120 16::224 24::?

- A) 496
- B) 504
- C) 528
- D) 548



$$3B + 5G = 33$$

$$6B + 5G = ?$$

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80. If 3 boys or 5 girls can complete a job in 33 days. How long will 6 boys and 5 girls take to complete it?
 A) 10 days B) 11 days C) 12 days D) 13 days

81. In a community, there are 48% Nepali spoken, 36% are Newar Bhasha spoken, 12% are Tamang spoken and remaining 84 inhabitants are Maithili spoken. Find out how many population are Newar Bhasha spoken?

A) 1008 B) 865 C) 756 D) 744

$$36 \times 2100 = 75600$$

$$48 \times 2100 = 100800$$

$$12 \times 2100 = 25200$$

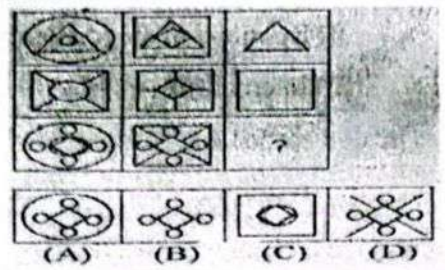
$$84 = 2100 \times 4$$

82. A pipe can fill a tank in 12 hours and another pipe can empty the same tank in 18 hours. If both pipes are opened together, how long will it take to fill the tank?

A) 30 Hours B) 32 Hours C) 36 Hours D) 40 Hours

$$\frac{1}{12} - \frac{1}{18} = \frac{1}{36}$$

83. Complete the Matrix :

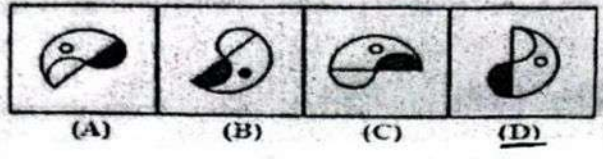


$$3B = 54$$

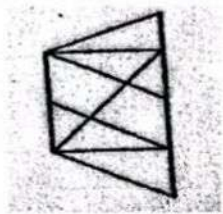
$$5G = 33$$

$$3G = 33 \times 5 \text{ days}$$

84. In the following questions, four figures are given. Three are similar in a certain way and so form a group. Find out which one of the figure does not belong to that group.

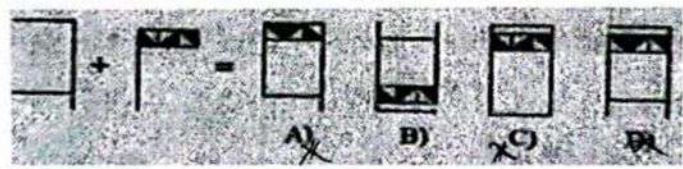


85. What is the maximum number of triangles in the given figure?

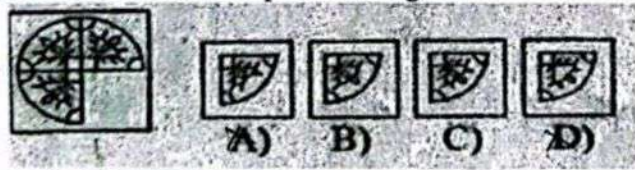


A) 12 B) 14 C) 16 D) 18

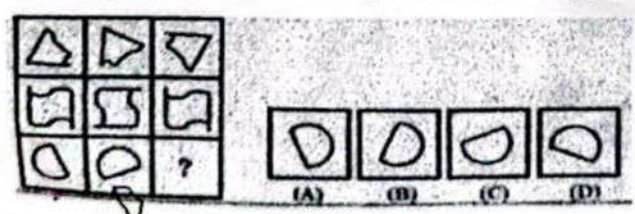
86. Which alternative can be formed by joining the given figures?



87. Which alternative completes the figure :

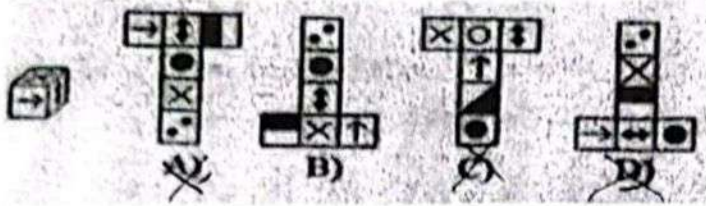


88. Which figure will replace the question mark of given figure?

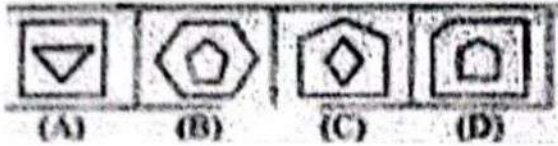


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89. Which cube can be made from the given net?



90. Which figure is different?



91. The center of gravity of a body is the point where :

- A) Total mass of the body is concentrated
- B) Resultant of all gravitational forces act
- C) All dimensions of the body are equal
- D) Internal stresses become zero

92. If the material has identical elastic properties in all directions, it is called :

- A) Elastic
- B) Isotropic
- C) Plastic
- D) Homogeneous

93. For a two-hinged parabolic arch, the horizontal thrust due to a rise in temperature (T) is proportional to:

- A) T
- B) T^2
- C) $1/T$
- D) \sqrt{T}

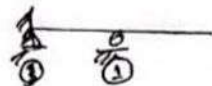
94. Two beam sections, one circular and the other square, made from the same materials and having the same cross-sectional area, when subjected to bending?

- A) Moment of resistance for both beams is the same
- B) Circular section has a higher moment of resistance
- C) Square section has a higher moment of resistance
- D) None of the above

$$d^2 \frac{\pi d^2}{4}$$

95. The degree of static indeterminacy of a propped cantilever beam is :

- A) 0
- B) 1
- C) 2
- D) 3



96. The knowledge necessary for making measurements for geodetic survey is :

- A) Core trigonometry
- B) Plane trigonometry
- C) Spherical trigonometry
- D) Analytic trigonometry

$$e + f = \frac{v^2}{gR}$$

$$v \times \frac{v}{gR} = \frac{v^2}{gR}$$

97. In a transition curve, the super-elevation is :

- A) Constant throughout
- B) Proportional to the length from the start
- C) Proportional to the square of the length
- D) Inversely proportional to the radius



$$\sum N = \sum B$$

98. In tacheometry, staff intercept is used to determine :

- A) Distance
- B) Angle only
- C) Temperature
- D) Bearing only

99. In a closed traverse, the sum of northings should equal the sum of southings. The difference is called :

- A) Closing error
- B) Latitude closure error
- C) Departure closure error
- D) Absolute error

100. An ideal transition curve is :

- A) Cubic parabola
- B) Cubic spiral
- C) Clothoid spiral
- D) True spiral