

# JAIPUR EDUCATION PLUS

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(P.No. 51, First floor Lane No. 3, Moti Nagar, Queen's Road)

Mob. : 7615012588, 9929544574

Email: [jaipureducationplus@gmail.com](mailto:jaipureducationplus@gmail.com)

[www.jaipureducationplus.com](http://www.jaipureducationplus.com)

## BOARD EXAM SECONDARY EXAMINATIONS, 2013

### SECTION-A

- Q.1. Find the H.C.F. of numbers 44 and 99. [Ans. HCF 11]
- Q.2. Total price of 7 Pencils and 5 Pens is Rs. 29. Write it down in the algebraic form.  
[Ans.  $7x + 5y = 29$ ]
- Q.3. Find the eleventh term of the A.P. 2, 7, 12 ..... [Ans. 52]
- Q.4. Find the coordination of the point which divides the join of points  $(-1, 7)$  and  $(1, -3)$  in the ratio 2 : 3. [Ans. 1, 3]
- Q.5. Write down the distance of the point  $(7, 3)$  from y-axis. [Ans. 7]
- Q.6. If tangents PA and PB from a point P to a circle with centre O are inclined to each other at an angle of  $80^\circ$ , then find  $\angle POA$ . [Ans.  $50^\circ$ ]
- Q.7. If the radius of a circle is 14 cm, then find the area of the circle. [Ans  $616 \text{ cm}^2$ ]
- Q.8. Divide the line segment of 7.5 cm in the ratio of 2 : 3, Draw figures only.
- Q.9. Radius of the circle is r and  $\theta$  is the angle of the sector in degree write down the formula of length of corresponding arc.
- Q.10. Write down the sum of the probabilities of all the elementary events of an experiment.

### SECTION-B

- Q.11. If  $DE \parallel BC$  in  $\triangle ABC$ ,  $AD = 1.5 \text{ cm}$ ,  $BD = 3 \text{ cm}$  and  $AE = 1 \text{ cm}$ , then find EC. [Ans. 2 cm]
- Q.12. If  $\sin A = 3/5$ , then find  $\cos A$  and  $\operatorname{cosec} A$ . [Ans  $\operatorname{cosec} A = 5/3$ ]
- Q.13. Find the value of  $\frac{\tan 65^\circ}{\cot 25^\circ}$ . [Ans. 1]
- Q.14. Find the value of  $\sin 35^\circ \cos 55^\circ + \cos 35^\circ \sin 55^\circ$  [Ans. 1]
- Q.15. A copper rod of a diameter 1 cm and length 8 cm is drawn into a wire of length 18 cm of uniform thickness. Find the thickness of the wire. [Ans. .067 cm]

### SECTION-C

- Q.16 Find the highest positive integer by which dividing the numbers 396, 436 and 542 remainders 5, 11 and 15 respectively. [Ans. 17]
- Q.17 Divide  $x^3 - 3x^2 + 3x - 5$  by  $x - 1 - x^2$  and verify the division algorithm.
- Q.18 Suresh started work in 1985 at an annual salary of Rs. 5,000 and revived an increment of Rs. 200 each year. In which year did his income reach Rs. 7000?
- Q.19 If  $\tan 2A = \cot (A-18^\circ)$ , where  $2A$  is an acute angle, then find the value of  $A$ . [Ans  $36^\circ$ ]
- Q.20 The shadow of a tower standing on a plane ground in found to be 40 m longer when the sun's altitude reduces of  $30^\circ$  form  $60^\circ$ . Find the height of the tower. [Ans. 3464 m]
- Q.21 Prove that the length of tangent drawn from an external point to the circle are equal.
- Q.22 Construct a triangle with sides 5 cm, 6 cm and 7 cm and then another triangle whose sides are  $\frac{7}{5}$  times of the corresponding sides of the first triangle. Write down steps of construction.
- Q.23 Find the area of the sector of a circle with radius 4 cm and of angle  $65^\circ$ . Also find the area of the corresponding major sector. (use  $\pi = 3.14$ ) [Ans.  $41.87 \text{ cm}^2$ ]
- Q.24 A metallic sphere of radius 4.2 cm is melted and recast into the shape of a cylinder of radius 7 cm. Find the height of the cylinder. [Ans. 2.016 cm]
- Q.25 12 defective pens are accidently mixed with 132 good ones. It is not possible to first look at a pen and tell whether it defective or not. One pen is taken out at random form this lot. Determine the probability that the pen taken out is a good one. [Ans. 11/12]

### SECTION-D

- Q.26 Coach of a cricket team buys one bat and 2 balls for Rs. 300. Later he buys another 2 bats and 3 balls of the same kind for Rs. 52. Represent this situation algebraically and solve it by graphical method. Also find out that how much money coach will pay for the purchase of one bat one ball.[Ans. Rs. 225]
- Q.27 A pole has to be erected at a point on the boundary of a circular park of diameter 13 meters in such a way that the differences of its distance from two diametrically opposite find gates A and B on the boundary is 7 meters. Is it possible to do so? If yes, at what distance from the two gates should the pole be erected?

Q.28 If a line is drawn parallel to one side of triangle to intersect the other two sides in distinct points then prove that the two sides are divided in the same ratio.

OR

Q.28 Prove that

In triangle, if square of one side is equal to the sum of the squares of the other two sides, then the angle opposite the first side is a right angle.

Q.29 Find the area of the triangle formed by joining the mid points of the sides of the triangle ABC whose vertices are  $A(0, -1)$ ,  $B(2, 1)$  and  $C(0, 3)$ . Find the ratio of this area of the area of  $\triangle ABC$  is  $A(0, -1)$ .

Q.30 A Life Insurance agent found the following data for distribution of ages of 100 policy holders. Calculate the median age, if policies are given only to persons having age 18 years onwards but less than 60 years. [Ans. 62]

Age (in years)	Below 20	Below 25	Below 30	Below 35	Below 40	Below 45	Below 50	Below 55	Below 60
Number of policy holders	2	6	24	45	78	89	92	98	100

OR

Q.30 The marks distribution of 30 students in a mathematics examination are as follows:

Class interval of marks	10-25	25-40	42-55	55-70	70-85	85-100
Number of Students	2	3	7	6	6	6