

CBSE – 2013 (CLASS – XI) CHAPTER WISE MOCK TEST**Time : 1.5hrs****Marks : 45****Section – A (1* 5 = 5)**

1. Find the 4th term of the expansion $(4x - 3y)^5$.
2. Find the equation of the ellipse satisfying the conditions:
Length of major axis 26, foci $(\pm 5, 0)$
3. Evaluate: $\lim_{x \rightarrow -2} \frac{x^5 + 32}{x + 2}$
4. Differentiate w.r.t x : $x^{-4}(3 - 4x^{-5})$
5. If AM of two numbers is twice their GM, what is the ratio of the greatest number to the smallest number.

Section – B (4* 4 = 16)

6. Find the ratio in which the line joining the points $(2, 4, 5)$, $(3, 5, -4)$ is divided by (i) xy- plane; (ii) yz-plane; (iii) zx-plane and find the coordinates of the points.
7. Evaluate: $\lim_{x \rightarrow 0} \frac{2 \sin x - \sin 2x}{x^3}$
8. Find the equation to the circle which passes through the points $(2, -2)$, $(3, 4)$ and has its centre on the line $2x + 2y = 7$. Find its centre and radius.

OR

The cable of uniformly loaded suspension bridge hangs in the form of a parabola. The roadway which is horizontal and 100 m long is supported by vertical wires attached to the cable, the longest wire being 30 m and the shortest being 6 m. Find the length of a supporting wire attached to the roadway 18 m from the middle.

9. Find the length of the perpendiculars from the point $(4, -7)$ to the line joining the origin and the point of intersection of the lines $2x - 3y + 14 = 0$ and $5x + 4y - 7 = 0$.

OR

Find the equation of a line which is perpendicular to the line joining $(4, 2)$ and $(3, 5)$ and cuts off an intercept of length 3 on y-axis.

Section – C (6* 4 = 24)

10. Find n, if the ratio of the fifth term from the beginning to the fifth term from the end in the expansion of $(\sqrt[4]{2} - \frac{1}{\sqrt[4]{3}})^n$ is $\sqrt{6} : 1$.

OR

If three consecutive coefficient in the expansion of $(1 + x)^n$ are in the ratio 6 : 33 : 110. Find n and r.

11. Find the sum of the following series up to n terms; $\frac{1^3}{1} + \frac{1^3 + 2^3}{1+3} + \frac{1^3 + 2^3 + 3^3}{1+3+5} + \dots$

12. Find M.D. about the mean and median for the following distributions:

Class	0-10	10-20	20-30	30-40	40-50	50-60	60-70	70-80
Frequency	5	8	12	15	20	14	12	6

13. (a) An integer is chosen at random from the first 200 positive integers. Find the probability that the integer is divisible by 6 or 8.
- (b) One card is drawn from a well shuffled pack of 52 cards. If each outcome is equally likely, calculate the probability that the card will be (i) a diamond (ii) not an ace (iii) a black card.