

Objective Type Questions

- Q.1** Each question has four possible answers. Choose the correct answer and encircle it.
- __1. Third term of $(x + y)^4$ is:
 (a) $4x^2y^2$ (b) $4x^3y$ (c) $6x^2y^2$ (d) $6x^3y$
- __2. The number of terms in the expansion $(a + b)^{13}$ are:
 (a) 12 (b) 13 (c) 14 (d) 15
- __3. The value of $\binom{n}{r}$ is:
 (a) $\frac{n!}{r!(n-r)!}$ (b) $\frac{n}{r(n-r)}$ (c) $\frac{n!}{r!(n-r)}$ (d) $\frac{n!}{(n-r)!}$
- __4. The second last term in the expansion of $(a + b)^7$ is:
 (a) $7a^6b$ (b) $7ab^6$
 (c) $7b^7$ (d) 15
- __5. $\binom{6}{4}$ will have the value:
 (a) 10 (b) 15 (c) 20 (d) 25
- __6. $\binom{3}{0}$ will have the value:
 (a) 0 (b) 1 (c) 2 (d) 3
- __7. In the expansion of $(a + b)^n$ the general term is:
 (a) $\binom{n}{r}a^r b^r$ (b) $\binom{n}{r}a^{n-r}b^r$
 (c) $\binom{n}{r-1}a^{n-r+1}b^{r-1}$ (d) $\binom{n}{r}a^{n-r-1}b^{r-1}$
- __8. In the expansion of $(a + b)^n$ the term $\binom{n}{r}a^{n-r}b^r$ will be:
 (a) n th term (b) r th term
 (c) $(r + 1)$ th term (d) None of these
- __9. In the expansion of $(a + b)^n$ the r th term is:
 (a) ${}^n C_r a^r b^r$ (b) ${}^n C_r a^{n-r} b^r$

- (c) ${}^n C_1 a^{n-r+1} b^{r-1}$ (d) ${}^n C_1 a^{n-r-1} b^{r-1}$
- __10. In the expansion of $(1+x)^n$ the co-efficient of 3rd term is:
 (a) $\binom{n}{0}$ (b) $\binom{n}{1}$ (c) $\binom{n}{2}$ (d) $\binom{n}{3}$
- __11. In the expansion of $(a+b)^n$ the sum of the exponents of a and b in any term is:
 (a) n (b) n-1 (c) n+1 (d) None of these
- __12. The middle term in the expansion of $(a+b)^6$ is:
 (a) $15a^4b^2$ (b) $20a^3b^3$ (c) $15a^2b^4$ (d) $6ab^5$
- __13. The value of $\binom{n}{n}$ is equal to:
 (a) Zero (b) 1 (c) n (d) -n
- __14. The expansion of $(1+x)^{-1}$ is:
 (a) $1-x-x^2-x^3+\dots$
 (b) $1-x+x^2-x^3+\dots$
 (c) $1-\frac{1}{1!}x-\frac{1}{2!}x^2+\frac{1}{3!}x^3+\dots$
 (d) $1-\frac{1}{1!}x+\frac{1}{2!}x^2-\frac{1}{3!}x^3+\dots$
- __15. The expansion of $(1-x)^{-1}$ is:
 (a) $1+x+x^2+x^3+\dots$
 (b) $1-x+x^2-x^3+\dots$
 (c) $1+\frac{1}{1!}x-\frac{1}{2!}x^2+\frac{1}{3!}x^3+\dots$
 (d) $1-\frac{1}{1!}x+\frac{1}{2!}x^2-\frac{1}{3!}x^3+\dots$
- __16. Binomial series for $(1+x)^n$ is valid only when:
 (a) $x < 1$ (b) $x < -1$
 (c) $|x| < 1$ (d) None of these
- __17. The value of $\binom{2n}{n}$ is:
 (a) $\frac{2n}{n! n!}$ (b) $\frac{(2n)!}{n! n!}$

(c) $\frac{(2n)!}{n!}$

(d) $\frac{(2n)!}{n(n-1)!}$

__18. The middle term of $\left(\frac{x}{y} - \frac{y}{x}\right)^4$ is:

(a) $\frac{4x^2}{y^2}$

(b) 6

(c) 8

(d) $\frac{4x}{y}$

Answers

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|-----|---|-----|---|-----|---|-----|---|-----|---|
| 1. | c | 2. | c | 3. | a | 4. | b | 5. | b |
| 6. | b | 7. | b | 8. | c | 9. | c | 10. | c |
| 11. | a | 12. | b | 13. | b | 14. | b | 15. | a |
| 16. | b | 17. | d | 18. | c | 19. | b | 20. | b |