Practice Paper 2015
Class – XII
Subject - Mathematics

Question 1 to 25 have only one correct answer and carry +1 mark for each correct answer and –0.25 mark for each wrong answer.

1. Factor reversal test is satisfied by
   [a] Laspeyre's index   [b] Paasche's index   [c] Fisher's ideal index   [d] None of these

2. Laspeyre's index is based on
   [a] Base year quantities   [b] Current year quantities
   [c] Average of current year and base year   [d] None of these

3. Laspeyre's and Pasche's method satisfy time reversal test
   [a] True   [b] False   [c] Both   [d] None of these

4. A frequency distribution
   [a] Arranges observations in an increasing order
   [b] Arranges observations in terms of a number of groups   [c] Relates to measurable characteristic
   [d] All of these

5. Ogive is used to obtain
   [a] Mean   [b] Mode   [c] Quartiles   [d] All of these

6. The probability of an event can assume any value between
   [a] –1 and 1   [b] 0 and 1   [c] –1 and 0   [d] None of these

7. The most important continuous probability distribution is known is
   [a] Binomial distribution   [b] Normal distribution
   [c] Chi–Square Distribution   [d] Sampling Distribution

8. The index number is a special type of G.M.
   [a] True   [b] False   [c] Both   [d] None of these

9. The number of test of adequacy is _____
   [a] 2   [b] 5   [c] 3   [d] 4

10. The derivative of $y = \sqrt{2x+1}$ w.r.t.x is :
    [a] $\dfrac{1}{\sqrt{2x+1}}$ [b] $\dfrac{-1}{\sqrt{2x+1}}$ [c] $\dfrac{1}{2} \cdot \sqrt{2x+1}$ [d] None of these

11. The sum of square of first natural numbers
    [a] $\dfrac{n}{2}(n+1)$ [b] $\dfrac{n}{6}(n+1)(2n+1)$ [c] $\left[\dfrac{n}{2}(n+1)\right]^2$ [d] None of these

12. P_{10} is the index for time
    [a] 1 on 0   [b] 0 on 1   [c] 1 on 1   [d] 0 on 0

13. $\dfrac{d}{dx}\sqrt{\log x}$

[a] $\dfrac{1}{2x\sqrt{\log x}}$ [b] $\dfrac{1}{2x \cdot \sqrt{\log x}}$ [c] $\dfrac{1}{\sqrt{\log x}}$ [d] $\dfrac{1}{x}$

14. Evaluate $\dfrac{dy}{dx}$; if $y = \sqrt{\dfrac{1-x}{1+x}}$

[a] $\dfrac{1}{(1+x)\sqrt{1-x^2}}$ [b] $\dfrac{-1}{(1+x)\sqrt{1-x^2}}$ [c] $\dfrac{1}{(1+x^2)\sqrt{1-x^2}}$ [d] None of these

15. If $y = \dfrac{10^x + \log x}{\sqrt{x}}$; then find $\dfrac{dy}{dx}$.

[a] $\dfrac{10^x(2 \times \log 10 - 1) + 2 - \log x}{2x\sqrt{x}}$ [b] $\dfrac{10^x(2 \times \log 10 + 1) + 2 - \log x}{2x\sqrt{x}}$

[c] $\dfrac{10^x(2-1) + 2 - \log x}{2x\sqrt{x}}$ [d] None of these

16. If $y = \sqrt{x} + \dfrac{1}{\sqrt{x}}$; then $2x\dfrac{dy}{dx}$ is

[a] $\sqrt{x} - \dfrac{1}{\sqrt{x}}$ [b] $\sqrt{x} + \dfrac{1}{\sqrt{x}}$ [c] $x - \dfrac{1}{x}$ [d] None of these

17. If $y = \dfrac{\sqrt{x^2 + 1} + \sqrt{x^2 - 1}}{\sqrt{x^2 + 1} - \sqrt{x^2 - 1}}$, then $\dfrac{dy}{dx}$ is

[a] $2x - \dfrac{2x^3}{\sqrt{x^4 - 1}}$ [b] $2x + \dfrac{2x^3}{\sqrt{x^4 - 1}}$ [c] $x - \dfrac{x^3}{\sqrt{x^4 - 1}}$ [d] None of these

18. If $y = \log\left[e^x\left(\dfrac{x-2}{x+2}\right)^{\frac{3}{4}}\right]$ then $\dfrac{dy}{dx}$ is

[a] $\dfrac{x^2 - 1}{x^2 - 4}$ [b] $\dfrac{x^2 + 1}{x^2 - 4}$ [c] $\dfrac{x^2 - 1}{x^2 + 4}$ [d] None of these

19. If $y = x^x$, then $\dfrac{dy}{dx}$ is

[a] $x^x(2 + \log x)$ [b] $x^x \log(ex)$ [c] $x^x \log\left(\dfrac{e}{x}\right)$ [d] None of these

20. If $\sqrt{\dfrac{y}{x}} + \sqrt{\dfrac{x}{y}} = 6$, then $\dfrac{dy}{dx}$ is

[a] $\dfrac{x + 17y}{17x + y}$ [b] $\dfrac{x - 17y}{17x + y}$ [c] $\dfrac{x - 17y}{17x - y}$ [d] None of these

21. If $y = x + \dfrac{1}{x + \dfrac{1}{x}}$, then $\dfrac{dy}{dx}$ is

[a] $\dfrac{x^4 + x^2 + 2}{\left(x^2 + 1\right)^2}$ [b] $\dfrac{x^4 + x^2 + 2}{x^2 + 1}$ [c] $\dfrac{\left(x^4 + x^2 + 2\right)^2}{x^2 + 1}$ [d] None of these

22. If $y = x^{\log(\log x)}$; then $\dfrac{dy}{dx}$ is

   [a] $\dfrac{y}{x}\left[\log\left(\log x\right) + 1\right]$ [b] $\dfrac{x}{y}\left[\log\left(\log x\right) + 1\right]$

   [c] $-\dfrac{x}{y}\left[\log\left(\log x\right) + 1\right]$ [d] None of these

23. If $e^{x-y} + \log xy + xy = 0$, then $\dfrac{dy}{dx}$ is

   [a] $\dfrac{y}{x}$ [b] $\dfrac{-y}{x}$ [c] $\dfrac{-x}{y}$ [d] None of these

24. If $y = x^{x^{x^{\cdots \infty}}}$; then $x \cdot \dfrac{dy}{dx}$ is

   [a] $\dfrac{y^2}{1 + y \log x}$ [b] $\dfrac{y^2}{1 - y \log x}$ [c] $\dfrac{-y^2}{1 - y \log x}$ [d] None of these

25. If $y^3 \cdot x^5 = \left(x + y\right)^8$, then $\dfrac{dy}{dx}$ is

   [a] $\dfrac{y}{x}$ [b] $\dfrac{-y}{x}$ [c] $\dfrac{y^5}{x^3}$ [d] None of these

ANSWERS

MATHEMATICS (TEST-3)

1	A	11	B	21	A
2	A	12	B	22	A
3	B	13	A	23	D

4	D	14	B	24	B
5	C	15	A	25	A
6	D	16	A	26	
7	B	17	B	27	
8	B	18	A	28	
9	D	19	B	29	
10	A	20	C	30	

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