

E 3228

(Pages : 3)

Reg. No.....

Name.....

B.B.A. DEGREE (C.B.C.S.S.) EXAMINATION, APRIL 2012

Second Semester

Complementary Course—MATHEMATICS FOR MANAGEMENT

Time : Three Hours

Maximum Weight : 25

Part A

Answer all questions.

Each bunch of four questions carries a weight of 1.

- I. 1. The $\frac{d^2y}{dx^2}$ value of $\sin(\cos x)$ is _____.
2. The derivative $y = e^{\sin x^2}$ is _____.
3. The equation for Average revenue is _____.
4. The equation for income elasticity of demand is given by _____.
- II. 5. Most important condition for Antisymmetric relationship is _____.
6. If $Z = x + iy$ then the complex number $x - iy$ is called as _____ of complex number.
7. If $Z = x + iy$, where $x = r \cos \theta$, $y = r \sin \theta$, then the modulus of complex no. is _____.
8. A relation R in a set A is an equivalence relation if R is _____, i.e. $(a, b) \in R, (b, c) \in R$, implies $(a, c) \in R$.
- III. 9. According to DeMorgan's law $(A' \cap B') =$ _____.
10. Two equivalent sets means _____.
11. Radius of a circle passing from origin having centre at (h, k) is given by _____.
12. Slope and intercept on axis by a line $Ax + By + C = 0$ is given by _____.
- IV. 13. Result of $\frac{d}{dx} a^x =$ _____.
14. $\frac{d}{dx}(U \pm V) =$ _____.

Turn over

15. Derivative of $x^3 + 4x^2 + 7$ is _____.
16. Integration of function a^x is _____.

(4 × 1 = 4)

Part B

*Answer any five questions.
Each question carries weight of 1.*

17. Power set.
18. Perpendicular to a straight line.
19. Limit of a function.
20. Elliptical orbit.
21. Successive differentiation.
22. Different forms of Equation of Circle.
23. Inverse relationship.
24. Conic section.

(5 × 1 = 5)

Part C

*Answer any four questions.
Each carries weight of 2.*

25. Integrate $\int \left(\sqrt{x} - \frac{1}{2}x + \frac{2}{\sqrt{x}} \right)$.
26. Find equation of straight line whose slope is 3 and bisects the joining of points (-2, 5) and (3, 4).
27. Find equation of circle, which passes through the points (4, 5) and has its centre at (2, 2).
28. Find 'a' if the distance between (9, 2) and (3, 4) is 8.
29. Equation of circle which touches the axis of y at $(0, \sqrt{3})$ and cuts x-axis in the points (-1, 0) and (-3, 0).
30. A company charges Rs. 550 for a transistor set on an order of 50 or less sets. The charge is reduced by Rs. 5/per set if order exceeds 50. Find the largest size order, company should allow to receive a maximum benefit.

(4 × 2 = 8)

Part D

*Answer any two questions.
Each carries weight of 4.*

31. Evaluate $\int e^x \left(\frac{\cos x + \sin x}{\cos^2 x} \right) dx$.

32. Find $\frac{dy}{dx}$ of $\sin^{-1} \left(\frac{2x}{1+x^2} \right)$.

33. Find derivative of $(\log x)^{\log x}$.

(2 × 4 = 8)