MATHS

BOOKS - MODERN PUBLICATION MATHS (KANNADA ENGLISH)

DIFFERENTIAL EQUATIONS

Multiple Choice Questions Level I

1. The solution of the differential equations $2x\frac{dy}{dx} - y = 3$ re[resemts a family of :

A. straight lines

B. circles

C. parabolas

D. ellipses

Answer: C

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2. The integrating factor of the differential equation :

$\frac{dy}{dx}(x \log x) + y = 2 \log x$ is :

A. e^x

B. $\log x$

C. log (logx)

D. x

Answer: B

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3. Solution of the differential equation $\frac{dx}{x} + \frac{dy}{y} = 0$ is

A. $\frac{1}{x} + \frac{1}{y} = c$

B. $\log x . \log y = c$

C. $xy = c$

D. $x + y = c$

Answer: C

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4. Find the general solution of the differential equation $x\frac{dy}{dx} + 2y = x^2, (x \neq 0)$

A. $y = \frac{x^2 + c}{4x^2}$

B. $y = \frac{x^2}{4} + c$

C. $y = \frac{x^4 + c}{x^2}$

D. $y = \frac{x^4 + c}{4x^2}$

Answer: D

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5. The differential equation $y\frac{dy}{dx} + x = c$ represents

A. Family of hyperbolas

B. Family of parabolas

C. Family of ellipses

D. Family of circles.

Answer: D

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6. The general solution of $e^x \cos y dx - e^x \sin y dy = 0$ is :

A. $e^x \cos y = k$

B. $e^x \sin y = k$

C. $e^x = k \cos y$

D. $e^x = k \sin y.$

Answer: A

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7. Family $y = Ax + A^3$ of curves will correspond to a differential equation of order :

A. 3

B. 2

C. 1

D. not defined

Answer: C

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8. General solution of $\frac{dy}{dx} + y\tan x = \sec x$ is :

A. y sec x = tan x + c

B. y tan x = sec x + c

C. tan x = y tan x + c

D. x sec x = tan y + c

Answer: A

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9. The general solution of $\frac{dy}{dx} = 2xe^{x^2-y}$ is

A. $e^{x^2-y} = c$

B. $x^{-y} + e^{x^2} = c$

C. $e^{y} = e^{x^2} + c$

D. $e^{x^2} + y = c$

Answer: C

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10. The solution of $\frac{dy}{dx} + y = e^{-x}, y(0) = 0$ is :

A. $y = e^x(x-1)$

B. $y = xe^{-x}$

C. $y = \mathrm{x\,e}^{-x} + 1$

D. $y = (x+1)e^{-x}$

Answer: B

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11. The order of the differential equation whose general solution is given by $y = (C_1 + C_2)\cos(x + C_3) - C_4 e^{x + c_5}$, where C_1, C_2, C_3, C_4, C_5 are aritrary constants , is :

A. 5

B. 4

C. 3

D. 2

Answer: C

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12. If f(x) and g(x) are two solutions of the differential equations a $\frac{d^2y}{dx^2} + x^2\frac{dy}{dx} + y = e^x$, then f(x) - g(X) is the solution of :

A. $a^2\frac{d^2y}{dx^2}+\frac{dy}{dx}+y=e^x$

B. $a^2\frac{d^2y}{dx^2}+y=e^x$

C. $a\frac{d^2y}{dx^2}+y=e^x$

D. $a\frac{d^2y}{dx^2}+x^2\frac{dy}{dx}+y=0$

Answer: D

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13. The solution of the differential equation $\frac{dy}{dx}+\frac{y}{x}=x^2$ is :

A. $x+y=\frac{x^2}{2}+c$

B. $x - y = \frac{1}{3}x^3 + c$

C. $xy = \frac{1}{4}x^4 + c$

D. $y - x = \frac{1}{4}x^4 + c$

Answer: C

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14. Solution of differential equation :

$dy - \sin x \sin y dx = 0$ is :

A. $e^{\cos x} \tan \frac{y}{2} = c$

B. $e^{\cos x} \tan y = c$

C. $\cos x \tan y = c$

D. $\cos x \sin y = c$

Answer: A

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15. Solution of differential equation : $\frac{dy}{dx} + ay = e^{mx}$ is :

A. $(a+m)y = e^{mx} + c$

B. $ye^{ax} = me^{\max} + c$

C. $y = e^{mx} + ce^{-ax}$

D. $(a+m)y = e^{mx} + ce^{-ax}$

Answer: D

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16. The general solution of $(1+x)ydx = (1-y)xdy$ is :

A. $x - y + \log(x/y) = c$

B. $x + y + \log(xy) = c$

C. $x + y + \log(x/y) = c$

D. $x - y + \log(xy) = c$

Answer: C

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17. The general solution of the differential equations :$x\left(1+y^2\right)dx+y\left(1+x^2\right)dy=0$ is :

A. $\left(1+x^2\right)\left(1+y^2\right)=c$

B. $\left(1+x^2\right)=c\left(1+y^2\right)$

C. $\left(1+y^4\right)=c\left(1+x^2\right)$

D. $\left(1+x^2\right)\left(1+y^2\right)=0$, is constant.

Answer: A

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18. Equation of the curve passing through , (3,9) , which satisfies the differential equation $\frac{dy}{dx} = x + \frac{1}{x^2}$, is :

A. $6xy = 3x^3 - 29x + 6$

B. $6xy = 3x^3 - 6 + 29x$

C. $6xy = 3x^3 - 6x$

D. None of these

Answer: B

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19. The differential equation of all parabolas having their axes of symmetry coinciding with the x- axis is :

A. $xy_2 + y_1 = 0$

B. $\mathrm{yy}_2 + y_1^2 = 0$

C. $xy_1 + y_2 = 0$

D. None of these

Answer: B

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20. A particle moves in a st. line with a velocity given by $\frac{dx}{dt} = x + 1$, (x is the distacne descirbed) . The time taken by a prticle to transverse a distance of 99 metres is :

A. $2\log_{10} e$

B. $\log_{10} e$

C. $2\log_e 10$

D. None of these

Answer: C

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21. Family of curves $y = e^x(A\cos x + B\sin x)$ represents the differential equation :

A. $\frac{d^2y}{dx^2} = 2\frac{dy}{dx} - y$

B. $\frac{d^2y}{dx^2} = 2\frac{dy}{dx} - 2y$

C. $\frac{d^2y}{dx^2} = a\frac{dy}{dx} - 2y$

D. $\frac{d^2y}{dx^2} = 2\frac{dy}{dx} + y$

Answer: B

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22. A solutionof of the differential differential equation $\left(\frac{dy}{dx}\right)^2 - x\frac{dy}{dx} + y = 0$ is :

A. y = 2

B. y = 2x

C. y = 2x - 4

D. $y = 2x^2 - 4$

Answer: C

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23. The degree of the differential equation : $\frac{d^3y}{dx^3} + 7\left(\frac{d^2y}{dx^2}\right)^2 = x^2 \log \frac{d^2y}{dx^2}$ is :

A. 2

B. 3

C. 1

D. None of these

Answer: D

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24. The degree of the differential equation of all curves having normal of constant length c is :

A. 2

B. 3

C. 4

D. None of these

Answer: A

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25. The solution of $\frac{dy}{dx} = \frac{px + q}{ry + s}$ represents a parabola if :

A. p = 0 , r = 0

B. p = 1 , q = 2

C. $p = 0, r \neq 0$

D. $p = 1, r = 1$

Answer: C

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26. The differential equations of all conics having centre at te origin is of order :

A. 2

B. 3

C. 4

D. 5

Answer: B

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27. If $f(x) = f'(x)$ and $f(1) = 2$, then f(3) equals :

A. e^2

B. $2e^2$

C. $3e^2$

D. $4e^2$

Answer: B

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28. The family $y = ax + a^3$ of curves is represented by the differential equation of degree :

A. one

B. two

C. three

D. None of these

Answer: A

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29. Solution of the differential equation

$$xdy - ydx = 0$$

represents a

A. a st. line passing through (0,0)

B. circle having centre at (0,0)

C. parabola having vertex at (0,0)

D. a rectangular hyperbola

Answer: A

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30. Integral curve staisfying $\frac{dy}{dx} = \frac{x^2 + y^2}{x^2 - y^2}$, y (1) = 1 has the slope at the point (1,0) of the curve equal to :

A. -1

B. 1

C. $-5/3$

D. $5/3$

Answer: B

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31. The differential equation $y\frac{dy}{dx} + x = a$ (a being a constant) represents :

A. set of circles with centres on x - axis

B. set of circles with centres on y - axis

C. set of parabolas

D. set of ellipses

Answer: A

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32. The solution of $\frac{d^2y}{dx^2} = 0$ represents :

A. a st . line

B. a circle

C. a parabola

D. a point

Answer: A

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33. Solution of $\frac{d^2y}{dx^2} = \log x$ is

A. $y = \frac{1}{2}x^2 \log x - \frac{3}{4}x^2 + C_1x + C_2$

B. $y = \frac{1}{2}x^2 \log x + \frac{3}{4}x^2 + C_1x + C_2$

C. $y = \frac{-1}{2}x^2 \log x - \frac{3}{4}x^2 + C_1 x + C_2$

D. None of these

Answer: A

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34. The differential equation of all non - vertical lines in a plane is :

A. $\frac{d^2y}{dx^2} = 0$

B. $\frac{d^2x}{dy^2} = 0$

C. $\frac{dy}{dx} = 0$

D. $\frac{dx}{dy} = 0.$

Answer: A

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35. The solution of the equation $\frac{d^2y}{dx^2} = e^{-2x}$ is :

A. $\frac{1}{4}e^{-2x}$

B. $\frac{1}{4}e^{-2x} + cx + d$

C. $\frac{1}{4}e^{-2x} + cx^2 + d$

D. $\frac{1}{4}e^{-2x} + cx + d.$

Answer: B

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36. The order and degree of the differential equation $\left(1+3\frac{dy}{dx}\right)^{2/3}=4\frac{d^3y}{dx^3}$ are :

A. $\left(1, \frac{2}{3}\right)$

B. $(3, 1)$

C. $(3, 3)$

D. $(1, 2)$

Answer: C

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37. The degree and order of the differential equation of the family of all parabolas whose axis is x - axis, are respectively :

A. 1,2

B. 3,2

C. 2,3

D. 2,1

Answer: A

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38. The differential equation for the family of curves $x^2 + y^2 - 2ay = 0$, where a is an arbitrary constant , is :

A. $2\left(x^2 - y^2\right)y' = xy$

B. $2\left(x^2 + y^2\right)y' = xy$

C. $\left(x^2 - y^2\right)y' = 2xy$

D. $\left(x^2 + y^2\right)y' = 2xy$

Answer: C

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39. The differential equation representing the family of curves $y^2 = 2c\left(x + \sqrt{c}\right)$, where $c > 0$, is a parameter is of order and degree as follows :

A. order 1, degree 1

B. order 1, degree 2

C. order 2, degree 2

D. order 1, degree 3

Answer: D

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40. The differential equation which represents the family of curves $y = c_1 e^{c_2 x}$ where c_1 and c_2 are arbitrary constants , is :

A. $y' = y^2$

B. $y'' = y'y$

C. $yy'' = y'$

D. $yy'' = (y')^2$

Answer: D

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Multiple Choice Questions Level Ii

1. The solution of the differential equation $x^2 \frac{dy}{dx} - xy = 1 + \cos \frac{y}{x}$ is

A. $\tan \frac{y}{2x} = c - \frac{1}{2x^2}$

B. $\tan \frac{y}{x} = c + \frac{1}{x}$

C. $\cos \frac{y}{x} = 1 + \frac{c}{x}$

D. $x^2 = \left(c + x^2\right). \tan \frac{y}{x}.$

Answer: A

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2. The solution of the equation $x + y\frac{dy}{dx} = 2y$ is :

A. $\log\left(\frac{x}{x-y}\right) = c + y - x$

B. $\log(y-x) = c + \frac{x}{y-x}$

C. $xy^2 = c^2(x+2y)$

D. $y^2 = c(x^2+2y)$

Answer: B

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3. The differential equation of all circles which pass through origin and whose centres lie on y - axis is :

A. $\left(x^2 - y^2\right)\frac{dy}{dx} - 2xy = 0$

B. $\left(x^2 - y^2\right)\frac{dy}{dx} + 2xy = 0$

C. $\left(x^2 - y^2\right)\frac{dy}{dx} - xy = 0$

D. $\left(x^2 - y^2\right)\frac{dy}{dx} + xy = 0$

Answer: A

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4. The curve for which the slope of the tangent at any point equals the ratio of the abscissa to the ordinate of the point is :

A. an ellipse

B. a circle

C. a rectangular hyperbola

D. None of these

Answer: C

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5. The slope of the tangent at (x,y) to a curve passing through $(1, \pi/4)$ is given by $\frac{y}{x} - \cos^2 \frac{y}{x}$, then the equation of the curve is :

A. $y = x \tan^{-1}[\log e/x]$

B. $y = \tan^{-1} \log(e/x)$

C. $y = x \tan^{-1}(x/e)$

D. None of these

Answer: A

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6. Solution of y $dx - xdy = x^2$ ydx is :

A. $ye^{x^2} = cx^2$

B. $ye^{-x^2} = cx^2$

C. $y^2e^{x^2} = cx^2$

D. $y^2e^{-x^2} = cx^2$

Answer: C

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7. Solution of $(x+y-1)dx+(2x+3y-3)dy=0$ is :

A. $y+x+\log(x+y-2)=c$

B. $y+2x+\log(x+y-2)=c$

C. $2y+x+\log(x+y-2)=c$

D. $2y+2x+\log(x+y-2)=c$

Answer: B

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8. The equation of the curve, which does not pass through (0,0) and having the portion of the tangent included between the co - ordinate axes is bisected at the point of contact, is :

A. a st. line or an ellipse

B. a circle or an ellipse

C. a parabola

D. a hyperbola

Answer: D

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9. The solution of the differential equation :

$$(1+y^2)+\left(x-e^{\tan^{-1}y}\right)\frac{dy}{dx}=0 \text{ is :}$$

A. $2xe^{\tan^{-1}y}=e^{2\tan^{-1}y}+k$

B. $xe^{\tan^{-1}y}=\tan^{-1}y+k$

C. $xe^{2\tan^{-1}y}=e^{\tan^{-1}y}+k$

D. $(x-2)=ke^{-\tan^{-1}y}$

Answer: A

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10. If y(t) is solution is $(t+1)\frac{dy}{dx} - ty = 1, y(0) = -1$ At $t = 1,$ the soulution is :

A. $e + \frac{1}{2}$

B. $-\frac{1}{2}$

C. $\frac{1}{2}$

D. $e - \frac{1}{2}$

Answer: B

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11. The differential equation for the family of curves $x^2 + y^2 - 2ay = 0$, where a is an arbitrary constant , is :

A. $(x^2 - y^2)y' = xy$

B. $2(x^2 + y^2)y' = xy$

C. $(x^2 - y^2)y' = 2xy$

D. $(x^2 + y^2)y' = 2xy$

Answer: C

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12. The solution of the differential equation :

$ydx + \left(x + x^2y\right)dy = 0$ is :

A. $\frac{1}{xy} + \log y = 0$

B. $-\frac{1}{xy} + \log y = c$

C. $-\frac{1}{xy} = c$

D. $\log y = cx$

Answer: B

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13. If $x\frac{dy}{dx} = y(\log y - \log x + 1)$, then the solution of the equation is :

A. $x \log\left(\frac{y}{x}\right) = cy$

B. $y \log\left(\frac{x}{y}\right) = cx$

C. $\log\left(\frac{x}{y}\right) = cy$

D. $\log\left(\frac{y}{x}\right) = cx$

Answer: D

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14. $x \quad dy = y \quad dx + y^2$ and $y(1) = 1$, then y (-3) is equal to :

A. 1

B. 5

C. 4

D. 3

Answer: D

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15. The differential equation whose solution is $Ax^2 + By^2 = 1$, where A and B are arbitrary constants , is of :

A. second order and second degree

B. first order and second degree

C. first order and first degree

D. second order and first degree

Answer: D

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16. The differential equation of all circles passing through the origin and having their centres on the x - axis is :

A. $x^2 = y^2 + 3xy\frac{dy}{dx}$

B. $y^2 = x^2 + 2xy\frac{dy}{dx}$

C. $y^2 = x^2 - 2xy\frac{dy}{dx}$

D. $x^2 = y^2 + xy\frac{dy}{dx}$

Answer: B

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17. The normal to a curve at P (x,y) meets the x - axis at G . If the distance of G from the origin is twice the abscissa of P, then the curve is a :

A. parabola

B. circle

C. hyperbola

D. ellipse

Answer: C

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18. If

$y = y(x)$ and $\frac{2+\sin x}{y+1}\left(\frac{dy}{dx}\right) = -\cos x, y(0) = 1$

then $y\left(\frac{\pi}{2}\right)$ equals :

A. $\frac{1}{3}$

B. $\frac{2}{3}$

C. $-\frac{1}{3}$

D. 1

Answer: A

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19. If $\left(x^2+y^2\right)dy = xy$ dxand y (1) = 1 . If $f(x_0) = e,$ then x_0 is equal to :

A. $e\sqrt{2}$

B. $e\sqrt{3}$

C. $2e$

D. $e\sqrt{5}$

Answer: B

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20. The differential equation : $\frac{dy}{dx} = \frac{\sqrt{1-y^2}}{y}$ determines a family of circles with :

A. variable radius and a fixed centre at (0,1)

B. variable radius and a fixed centre at (0,-1)

C. fixed radius 1 and variable centres along x - axis.

D. fixed radius 1 and variable centres along y - axis.

Answer: C

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1. The solution of differential equation

$\cos x dy = y(\sin x - y)dx, 0 < x < \pi/2$ is

A. $\sec x = (\tan x + c)y$

B. $y \sec x = \tan x + c$

C. $y \tan x = \sec x + c$

D. $\tan x = (\sec x + c)y$

Answer: A

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2. If $\frac{dy}{dx} = y + 3 > 0$ and $y(0) = 2$, then y (ln 2) is equal to :

A. 7

B. 5

C. 13

D. -2

Answer: A

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3. Let I be the purchase value of an equipment and v (t) be the value after it has been used for t years. The value v (t) depriciates at a rate given by the differentail equation $\frac{dv(t)}{dt} = -k(T-t)$, where $k > 0$ is a constant and T is the total life in years of the equipment . Then the scrap value v (t) of the equipment is :

A. $T^2 - \frac{I}{K}$

B. $I - \frac{kT^2}{2}$

C. $I - \frac{k(T-t)^2}{2}$

D. e^{-kt}

Answer: B

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4. Consider the differential equation $y^2dx + \left(x - \frac{1}{y}\right)dy = 0$ if $y(1) = 1$ then x is

A. $4 - \frac{2}{y} - \frac{e^{1/y}}{e}$

B. $3 - \frac{1}{y} + \frac{e^{1/y}}{e}$

C. $1 + \frac{1}{y} + \frac{e^{1/y}}{e}$

D. $1 - \frac{1}{y} + \frac{e^{1/y}}{e}$

Answer: C

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5. The curve that passes through the point (2,3) and has the property that the segment of any tangent to it lying between the co - ordinate axes is bisected by the point of contact is given by :

A. $2y - 3x = 0$

B. $y = \frac{6}{x}$

C. $x^2 + y^2 = 13$

D. $\left(\frac{x}{2}\right)^2 + \left(\frac{y}{3}\right)^2 = 2$

Answer: B

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6. The population p (t) at time t of a cetrain mouse species satisfies the differential equation $\frac{dp(t)}{dt} = 0.5pt - 450$. If p (0) = 850 , then the time at which the population becomes zero is :

A. $2l_n18$

B. l_n9

C. $\frac{1}{2}l_n18$

D. l_n18

Answer: A

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7. If y(x) satisfies the differential equation :

$y' - y\tan x = 2x\sec x$ and $y(0) = 0$, then :

A. $y\left(\frac{\pi}{4}\right) = \frac{\pi^2}{8\sqrt{2}}$

B. $y'\left(\frac{\pi}{4}\right) = \frac{\pi^2}{18}$

C. $y\left(\frac{\pi}{3}\right) = \frac{\pi^2}{9}$

D. $y'\left(\frac{\pi}{3}\right) = \frac{4\pi}{3} + \frac{2\pi^2}{3\sqrt{3}}$

Answer: A::D

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8. At present , a firm is manufacturing 2000 iterm . It is estimated that the rate of change of production P w.r.t additional number of workers x is given by :

$$\frac{dP}{dx} = 100 - 12\sqrt{x}.$$

If the empolys 25 more workers , then the new level of production of items is :

A. 3000

B. 3500

C. 4500

D. 2500

Answer: B

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9. A curve passes through the point $(1, \pi/6)$. Let the slope of the curve at each point (x,y) be $\frac{y}{x} + \sec\left(\frac{y}{x}\right), x > 0$. Then the equation of the curve is :

A. $\sin\left(\frac{y}{x}\right) = \log x + \frac{1}{2}$

B. $\cos\left(\frac{y}{x}\right) = \log x + 2$

C. $\sec\left(\frac{2y}{x}\right) = \log x + 2$

D. $\log x + \frac{1}{2}$

Answer: A

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10. Let the popution of rabbits surviving at a time t be governed by the differential equation $\frac{dp(t)}{dt} = \frac{1}{2}p(t) - 200$. If p(0) = 100 , then p(t) equals :

A. $300 - 200e^{-t/12}$

B. $600 - 500e^{t/12}$

C. $400 - 300e^{t/12}$

D. $400 - 300e^{-t/12}$

Answer: D

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11. Let y(x) be the solution of the differential equaiton :

$$(x \log x)\frac{dy}{dx} + y = 2x \log x, (x \geq 1)$$

Then y(e) is equal to :

A. e

B. 0

C. 2

D. 2e

Answer: C

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Recent Competitive Questions

1. If 'm' and 'n' are the order and degree of the differential equation $(y'')^5 + 4.\frac{(y'')^3}{y'''} + y''' = \sin x$, then

A. $m = 3, n = 5$

B. $m = 3, n = 1$

C. $m = 3, n = 3$

D. $m = 3, n = 2$

Answer: D

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2. The general solution of the differential equation $\sqrt{1 - x^2y^2}.\, dx = y.\, dx + x.\, dy$ is

A. $\sin(xy) = x + c$

B. $\sin^{-1}(xy) + x = c$

C. $\sin(x + c) = xy$

D. $\sin(xy) + x = c$

Answer: C

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3. The order and degree of the differential equation $y = x\frac{dy}{dx} + \frac{2}{\frac{dy}{dx}}$ is

A. 1,3

B. 1,1

C. 1,2

D. 2,1

Answer: C

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4. The general solution of the differential equation $\frac{dy}{dx} + \frac{y}{x} = 3x$ is

A. $y = x + \frac{C}{x}$

B. $y = x^2 + \frac{C}{x}$

C. $y = x - \frac{C}{x}$

D. $y = x^2 - \frac{C}{x}$

Answer: B

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5. The particular solution of $\frac{y}{x}\frac{dy}{dx} = \frac{1+y^2}{1+x^2}$, when x = 1 , y = 2 is :

A. $5(t+y^2) = 2(1+x^2)$

B. $2(1+y^2) = 5(1+x^2)$

C. $5(1+y^2) = (1+x^2)$

D. $(1+y^2) = 2(1+x^2)$

Answer: B

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6. The solution of the differential equation :

$\frac{dy}{dx} = x + y^2$ is :

A. $\frac{1}{x+y} = c$

B. $\sin^{-1}(x+y) = x + c$

C. $\tan^{-1}(x+y) = c$

D. $\tan^{-1}(x+y) = x + c$

Answer: D

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7. The order of differential equation of all circles of given radius "a" is _____

A. 4

B. 2

C. 1

D. 3

Answer: B

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8. The solution of differential equation :

$x\frac{dy}{dx} + 2y = x^2$ is :

A. $y = \frac{x^2 + C}{4x^2}$

B. $y = \frac{x^2}{4} + C$

C. $y = \frac{x^4 + C}{x^2}$

D. $y = \frac{x^4 + C}{4x^2}$

Answer: D

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9. The differential equation of the family of parabolas $y^2 = 4ax$, where a is parameter is :

A. $\frac{dy}{dx} = \frac{y}{2x}$

B. $\frac{dy}{dx} = -\frac{y}{2x}$

C. $\frac{dy}{dx} = -\frac{2y}{x}$

D. $\frac{dy}{dx} = \frac{2y}{x}$

Answer: A

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10. If $\frac{dy}{dx} = \frac{y + x\tan\frac{y}{x}}{x}$, then $\sin\frac{y}{x} =$

A. cx^2

B. cx

C. cx^3

D. $\log x$

Answer: B

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11. The product of the degree and order of the D.E. :

$$\left(\frac{d^2y}{dx^2}\right)^2 - \left(\frac{dy}{dx}\right)^3 = y^3 \text{ is :}$$

A. 4

B. 6

C. 2

D. 3

Answer: A

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12. The general solution of the differential equation $\frac{dy}{dx} + y\,g'(x) = g(x)g'(x)$ where $g(x)$ is a given function of x is

$g(x) + \log\{1 + y + g(x)\} = C$

$g(x) + \log\{1 + y - g(x)\} = C$

$g(x) - \log\{1 + y - g(x)\} = C$ None of these

A. $g(x) + \log(1 + y + g(x)) = c$

B. $g(x) + \log(1 + y - g(x)) = c$

C. $g(x) - \log(1 - y - g(x)) = c$

D. $g(x) - \log(1 - y + g(x)) = c$

Answer: B

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