2016 (S) Roll No: _____

INTERMEDIATE PART-II (12th CLASS)

MATHEMATICS PAPER-II TIME ALLOWED: 2.30 Hours

SUBJECTIVE MAXIMUM MARKS: 80

NOTE: - Write same question number and its part number on answer book, as given in the question paper.

SECTION-I

2. Attempt any eight parts. **8 × 2 = 16**

(i) Find $f^{-1}(x)$ if $f(x) = -2x + 8$

(ii) Evaluate $\lim_{x \to 2} \frac{\sqrt{x} - \sqrt{2}}{x - 2}$

(iii) Evaluate $\lim_{x \to 0} \frac{Sinx^0}{x}$

(iv) Diff. w.r.t. x by definition $2x^2 + 1$

(v) If $y = x^4 + 2x^2 + 2$ then find $\frac{dy}{dx}$

(vi) Find $\frac{dy}{dx}$ if $y = (x^3 + 1)^9$

(vii) Find $\frac{dy}{dx}$ if $x^2 - 4xy - 5y = 0$

(viii) Diff. $Sin^3 x$ w.r.t. $Cos^2 x$

(ix) Find $f'(x)$ when $f(x) = \frac{e^{ax} - e^{-ax}}{e^{ax} + e^{-ax}}$

(x) Find $\frac{dy}{dx}$ if $x = at^2$, $y = bt^4$

(xi) Apply Maclaurin's series to prove that $e^{2x} = 1 + 2x + \frac{4x^2}{\lfloor 2} + -----$

(xii) Determine the interval in which f is increasing, $f(x) = 4 - x^2$, $x \in (-2, 2)$

3. Attempt any eight parts. **8 × 2 = 16**

(i) $y = x^2 - 4$, x changes from 3 to 3.02. Find δy.

(ii) Evaluate $\int \frac{x}{x + 2}\, dx$

(iii) Evaluate $\int \frac{1}{\sqrt{a^2 - x^2}}\, dx$ by substitution.

(iv) Evaluate $\int x\, Sinx\, dx$

(v) Evaluate $\int e^x \left(\frac{1}{x} + \ell n x \right) dx$

(vi) $\int \frac{dx}{x^2 + 4x + 13}$ evaluate it.

(vii) Evaluate $\int_0^{\pi/4} \frac{1}{1 - Sin x}\, dx$

(viii) Evaluate $\int_1^2 (x^2 + 1)\, dx$

(ix) Find area between $X-$axis and the curve $y = x^2 + 1$ from $x = 1$ to $x = 2$.

(x) Solve $\frac{dy}{dx} = \frac{y^2 + 1}{e^{-x}}$

(xi) Graph $2x + y \geq 2$

(xii) Find corner points of $2x - 3y \leq 6$, $2x + 3y \leq 12$, $x \geq 0$, $y \geq 0$

P.T.O.

4. **Attempt any nine parts.** **$9 \times 2 = 18$**

(i) Find the inclination of line joining the points $A(3, -2)$ and $B(2, 7)$

(ii) By means of slope, show that the points $(-1, -3)$, $(1, 5)$ and $(2, 9)$ are on the same line.

(iii) Convert the equation of line $2x - 4y + 11 = 0$ into slope-intercept form.

(iv) Check the point $(-2, 3)$ lies above or below the line $3x - 5y + 8 = 0$

(v) Find measure of the angle between the lines represented by $x^2 - xy - 6y^2 = 0$

(vi) Find radius of the circle with equation $x^2 + y^2 + 12x - 10y = 0$

(vii) Check position of point $(5, 6)$ with respect to the circle $x^2 + y^2 + 6x - 4y + \frac{1}{2} = 0$

(viii) Find focus and vertex of the parabola $x^2 = -16y$

(ix) Find equation of ellipse with foci $(\pm 3, 0)$ and minor axis of length 10.

(x) Find a unit vector along the direction of vector $\underline{v} = -\frac{\sqrt{3}}{2}\underline{i} - \frac{1}{2}\underline{j}$

(xi) Find a real number α so that vectors $\underline{u}$ and $\underline{v}$ are perpendicular,

$\underline{u} = 2\alpha\underline{i} + \underline{j} - \underline{k}$, $\underline{v} = \underline{i} + \alpha\underline{j} + 4\underline{k}$

(xii) Compute $\underline{a} \times \underline{b}$ if $\underline{a} = 2\underline{i} - 6\underline{j} - 3\underline{k}$, $\underline{b} = 4\underline{i} + 3\underline{j} - k$

(xiii) Prove that the vectors $\underline{i} - 2\underline{j} + 3\underline{k}$, $-2\underline{i} + 3\underline{j} - 4\underline{k}$ and $\underline{i} - 3\underline{j} + 5\underline{k}$ are coplanar.

SECTION-II

NOTE: - Attempt any three questions. **$3 \times 10 = 30$**

5.(a) Find $\frac{f(a+h) - f(a)}{h}$ and simplify where $f(x) = Sin\,x$

(b) If $y = \sqrt{x} - \frac{1}{\sqrt{x}}$ show that $2x\frac{dy}{dx} + y = 2\sqrt{x}$

6.(a) Solve $\frac{dy}{dx} = \frac{3}{4}x^2 + x - 3$ if $y = 0$ when $x = 2$.

(b) Prove that the linear equation $ax + by + c = 0$ in two variables x and y represents a straight line.

7. (a) Evaluate $\int_0^{\pi/4} \frac{Sec\theta}{Sin\theta + Cos\theta}\, d\theta$

(b) Minimize $z = 3x + y$ subject to the constraints $3x + 5y \geq 15$, $x + 6y \geq 9$
$x \geq 0$, $y \geq 0$

8. (a) Find an equation of the circle passing through $A(3, -1)$, $B(0, 1)$ and having centre at $4x - 3y - 3 = 0$

(b) If $\underline{u} = 2\underline{i} + 3\underline{j} + 4\underline{k}$, $\underline{v} = -\underline{i} + 3\underline{j} - \underline{k}$ and $\underline{w} = \underline{i} + 6\underline{j} + z\underline{k}$ represent the sides of a triangle. Find value of z.

9.(a) Find an equation of the parabola with focus $(-3, 1)$ and directrix $x - 2y - 3 = 0$

(b) Prove that $Sin(\alpha - \beta) = Sin\alpha\, Cos\beta - Cos\alpha\, Sin\beta$ by vector method.

Paper Code Number: 8191

2016 (S) Roll No: _____

INTERMEDIATE PART-II (12th CLASS)

MATHEMATICS PAPER-II

TIME ALLOWED: 30 Minutes

MAXIMUM MARKS: 20

OBJECTIVE

Note: You have four choices for each objective type question as A, B, C and D. The choice which you think is correct, fill that circle in front of that question number. Use marker or pen to fill the circles. Cutting or filling two or more circles will result in zero mark in that question. Attempt as many questions as given in objective type question paper and leave others blank. No credit will be awarded in case BUBBLES are not filled. Do not solve question on this sheet of OBJECTIVE PAPER.

Q.No.1

(1) If $x = a^y$ then $y =$ (A) $\log_a x$ (B) $\log_x a$ (C) $\log_e x$ (D) x^a

(2) If $f : X \to X$ is defined as $f(x) = X$ then $f(x)$ is called:- (A) Constant function (B) Exponential function (C) Identity function (D) Logarithmic function

(3) Derivative of $\sqrt{x}$ at $x = a$ is:- (A) $\frac{1}{2a}$ (B) $\frac{2}{\sqrt{a}}$ (C) $\frac{1}{2\sqrt{a}}$ (D) $2\sqrt{a}$

(4) $\frac{d}{dx}(a^x) =$ (A) $x\,a^{x-1}$ (B) a^x (C) $\frac{a^x}{\ell na}$ (D) $a^x \ell n a$

(5) $\frac{d}{dx}\log(5x) =$ (A) $\frac{1}{x}$ (B) $\frac{1}{5x}$ (C) $\frac{1}{x} \times 5$ (D) $\frac{1}{x\ell n5}$

(6) $\frac{d}{dx}(x^2 + f(x)) =$ (A) $2x + f'(x)$ (B) $2x + f(x)$ (C) $f'(x)$ (D) $2x + 0$

(7) $\frac{d}{dx}(Cos^{-1}x) =$

(A) $\frac{1}{\sqrt{1-x^2}}$ (B) $-\frac{1}{\sqrt{1-x^2}}$ (C) $\frac{1}{\sqrt{x^2-1}}$ (D) $-\frac{1}{\sqrt{x^2-1}}$

(8) $\int \frac{2x}{x^2+1}\,dx =$ (A) $\tan^{-1}x$ (B) $\ell n\left|x^2+1\right|$ (C) $2\tan^{-1}x$ (D) $2x\tan^{-1}x$

(9) $\int \frac{1}{x^2}\,dx =$ (A) $\ell n x$ (B) $\ell n x^2$ (C) $-1/x$ (D) $-2/x^3$

(10) $\int f^n(x) f'(x)\,dx =$ (A) $f^n(x) f''(x)$ (B) $f^n(x)$ (C) $\frac{f^2(x)}{2}$ (D) $\frac{f^{n+1}(x)}{n+1}$

(11) $\int \ell nx . \frac{1}{x}\,dx =$

(A) $\frac{(\ell nx)^2}{2}$ (B) $\ell n(\ell n x)$ (C) $\ell nx\,\ell n x$ (D) $\frac{(\ell nx)^2}{2}\ell nx$

(12) $\int_a^b \frac{1}{x}\,dx =$ (A) $\ell n\left(\frac{a}{b}\right)$ (B) $\ell n\left(\frac{b}{a}\right)$ (C) $\frac{1}{b} - \frac{1}{a}$ (D) $b - a$

(13) The distance of point $(-1, 2)$ from $x-$axis:- (A) -2 (B) -1 (C) 1 (D) 2

(14) Equation of line bisecting 2nd and 4th quadrant is:-

(A) $y = x$ (B) $y = 2x$ (C) $y = -x$ (D) $2x = 4y$

(15) Point of intersection of lines $x = 3$, $y = 2$ is:-

(A) (3, 2) (B) (2, 3) (C) (0, 0) (D) Does not exist

(16) Number of points which satisfy $x + y \le 2$ is:- (A) 1 (B) 2 (C) Finite (D) Infinite

(17) If e is eccentricity of hyperbola then:- (A) $e = 0$ (B) $e = 1$ (C) $0 < e < 1$ (D) $e > 1$

(18) Set of all points equidistant from a fixed line and a fixed point is called:-

(A) Circle (B) Parabola (C) Ellipse (D) Hyperbola

(19) For any vectors $\underline{u}$ and $\underline{v}$, $\underline{u} + \underline{v} =$ (A) $\underline{u} - \underline{v}$ (B) $\underline{v} + \underline{u}$ (C) $\underline{v} - \underline{u}$ (D) $\underline{u} \cdot \underline{v}$

(20) If $\underline{a}, \underline{b}$ are vectors then $\underline{a} \times \underline{b} =$

(A) $ab\,Sin\theta$ (B) $ab\,Cos\theta\,\hat{n}$ (C) $\underline{b} \times \underline{a}$ (D) $-\underline{b} \times \underline{a}$

Paper Code Number: 8193	2016 (S) INTERMEDIATE PART-II (12th CLASS)	Roll No: _____

MATHEMATICS PAPER-II

TIME ALLOWED: 30 Minutes
MAXIMUM MARKS: 20

OBJECTIVE

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Q.No.1

(1) Number of points which satisfy $x + y \leq 2$ is:- (A) 1 (B) 2 (C) Finite (D) Infinite

(2) If e is eccentricity of hyperbola then:- (A) $e = 0$ (B) $e = 1$ (C) $0 < e < 1$ (D) $e > 1$

(3) Set of all points equidistant from a fixed line and a fixed point is called:-

(A) Circle (B) Parabola (C) Ellipse (D) Hyperbola

(4) For any vectors $\underline{u}$ and $\underline{v}$ $\underline{u} + \underline{v} =$ (A) $\underline{u} - \underline{v}$ (B) $\underline{v} + \underline{u}$ (C) $\underline{v} - \underline{u}$ (D) $\underline{u} \cdot \underline{v}$

(5) If $\underline{a}, \underline{b}$ are vectors then $\underline{a} \times \underline{b} =$

(A) $ab\,Sin\theta$ (B) $ab\,Cos\theta\,\hat{n}$ (C) $\underline{b} \times \underline{a}$ (D) $-\underline{b} \times \underline{a}$

(6) If $x = a^y$ then $y =$ (A) $\log_a x$ (B) $\log_x a$ (C) $\log_e x$ (D) x^a

(7) If $f : X \to X$ is defined as $f(x) = X$ then $f(x)$ is called:- (A) Constant function

(B) Exponential function (C) Identity function (D) Logarithmic function

(8) Derivative of $\sqrt{x}$ at $x = a$ is:- (A) $\frac{1}{2a}$ (B) $\frac{2}{\sqrt{a}}$ (C) $\frac{1}{2\sqrt{a}}$ (D) $2\sqrt{a}$

(9) $\frac{d}{dx}(a^x) =$ (A) $x\,a^{x-1}$ (B) a^x (C) $\frac{a^x}{\ell na}$ (D) $a^x \ell n a$

(10) $\frac{d}{dx}\log(5x) =$ (A) $\frac{1}{x}$ (B) $\frac{1}{5x}$ (C) $\frac{1}{x} \times 5$ (D) $\frac{1}{x\ell n5}$

(11) $\frac{d}{dx}(x^2 + f(x)) =$ (A) $2x + f'(x)$ (B) $2x + f(x)$ (C) $f'(x)$ (D) $2x + 0$

(12) $\frac{d}{dx}(Cos^{-1}x) =$

(A) $\frac{1}{\sqrt{1-x^2}}$ (B) $-\frac{1}{\sqrt{1-x^2}}$ (C) $\frac{1}{\sqrt{x^2-1}}$ (D) $-\frac{1}{\sqrt{x^2-1}}$

(13) $\int \frac{2x}{x^2+1}\,dx =$ (A) $\tan^{-1}.x$ (B) $\ell n\left|x^2 + 1\right|$ (C) $2\tan^{-1}x$ (D) $2x\tan^{-1}x$

(14) $\int \frac{1}{x^2}\,dx =$ (A) $\ell n\,x$ (B) $\ell n\,x^2$ (C) $-1/x$ (D) $-2/x^3$

(15) $\int f^n(x) f'(x)\,dx =$ (A) $f^n(x) f^n(x)$ (B) $f^n(x)$ (C) $\frac{f^2(x)}{2}$ (D) $\frac{f^{n+1}(x)}{n+1}$

(16) $\int \ell nx . \frac{1}{x}\,dx =$

(A) $\frac{(\ell nx)^2}{2}$ (B) $\ell n(\ell n\,x)$ (C) $\ell nx\,\ell n\,x$ (D) $\frac{(\ell nx)^2}{2}\ell nx$

(17) $\int_a^b \frac{1}{x}\,dx =$ (A) $\ell n\left(\frac{a}{b}\right)$ (B) $\ell n\left(\frac{b}{a}\right)$ (C) $\frac{1}{b} - \frac{1}{a}$ (D) $b - a$

(18) The distance of point $(-1, 2)$ from $x-$axis:- (A) -2 (B) -1 (C) 1 (D) 2

(19) Equation of line bisecting 2nd and 4th quadrant is:-

(A) $y = x$ (B) $y = 2x$ (C) $y = -x$ (D) $2x = 4y$

(20) Point of intersection of lines $x = 3$, $y = 2$ is:-

(A) (3, 2) (B) (2, 3) (C) (0, 0) (D) Does not exist

Paper Code Number: 8195	2016 (S) INTERMEDIATE PART-II (12th CLASS)	Roll No: _____

MATHEMATICS PAPER-II

TIME ALLOWED: 30 Minutes

OBJECTIVE

MAXIMUM MARKS: 20

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Q.No.1

(1) $\int \ell nx . \frac{1}{x} dx =$

(A) $\frac{(\ell nx)^2}{2}$ (B) $\ell n(\ell n x)$ (C) $\ell nx \, \ell n x$ (D) $\frac{(\ell nx)^2}{2} \ell nx$

(2) $\int_a^b \frac{1}{x} dx =$ (A) $\ell n\left(\frac{a}{b}\right)$ (B) $\ell n\left(\frac{b}{a}\right)$ (C) $\frac{1}{b} - \frac{1}{a}$ (D) $b - a$

(3) The distance of point $(-1, 2)$ from $x-$axis:- (A) -2 (B) -1 (C) 1 (D) 2

(4) Equation of line bisecting 2nd and 4th quadrant is:-

(A) $y = x$ (B) $y = 2x$ (C) $y = -x$ (D) $2x = 4y$

(5) Point of intersection of lines $x = 3$, $y = 2$ is:-

(A) (3, 2) (B) (2, 3) (C) (0, 0) (D) Does not exist

(6) Number of points which satisfy $x + y \leq 2$ is:- (A) 1 (B) 2 (C) Finite (D) Infinite

(7) If e is eccentricity of hyperbola then:- (A) $e = 0$ (B) $e = 1$ (C) $0 < e < 1$ (D) $e > 1$

(8) Set of all points equidistant from a fixed line and a fixed point is called:-

(A) Circle (B) Parabola (C) Ellipse (D) Hyperbola

(9) For any vectors $\underline{u}$ and $\underline{v}$ $\underline{u} + \underline{v} =$ (A) $\underline{u} - \underline{v}$ (B) $\underline{v} + \underline{u}$ (C) $\underline{v} - \underline{u}$ (D) $\underline{u} \cdot \underline{v}$

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(A) $ab\,Sin\theta$ (B) $ab\,Cos\theta\,\hat{n}$ (C) $\underline{b} \times \underline{a}$ (D) $-\underline{b} \times \underline{a}$

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(14) $\frac{d}{dx}(a^x) =$ (A) $x\,a^{x-1}$ (B) a^x (C) $\frac{a^x}{\ell na}$ (D) $a^x \ell n a$

(15) $\frac{d}{dx} \log(5x) =$ (A) $\frac{1}{x}$ (B) $\frac{1}{5x}$ (C) $\frac{1}{x} \times 5$ (D) $\frac{1}{x \ell n 5}$

(16) $\frac{d}{dx}(x^2 + f(x)) =$ (A) $2x + f'(x)$ (B) $2x + f(x)$ (C) $f'(x)$ (D) $2x + 0$

(17) $\frac{d}{dx}(Cos^{-1}x) =$

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(18) $\int \frac{2x}{x^2+1} dx =$ (A) $\tan^{-1}x$ (B) $\ell n|x^2 + 1|$ (C) $2\tan^{-1}x$ (D) $2x\tan^{-1}x$

(19) $\int \frac{1}{x^2} dx =$ (A) $\ell n x$ (B) $\ell n x^2$ (C) $-1/x$ (D) $-2/x^3$

(20) $\int f^n(x) f'(x)\, dx =$ (A) $f^n(x) f''(x)$ (B) $f^n(x)$ (C) $\frac{f^2(x)}{2}$ (D) $\frac{f^{n+1}(x)}{n+1}$

Paper Code Number: 8197	2016 (S) INTERMEDIATE PART-II (12th CLASS)	Roll No: _____

MATHEMATICS PAPER-II

TIME ALLOWED: 30 Minutes

OBJECTIVE

MAXIMUM MARKS: 20

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Q.No.1

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(2) $\frac{d}{dx}(Cos^{-1}x) =$

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(3) $\int \frac{2x}{x^2+1}\,dx =$ (A) $\tan^{-1}x$ (B) $\ell n\left|x^2+1\right|$ (C) $2\tan^{-1}x$ (D) $2x\tan^{-1}x$

(4) $\int \frac{1}{x^2}\,dx =$ (A) $\ell n\,x$ (B) $\ell n\,x^2$ (C) $-1/x$ (D) $-2/x^3$

(5) $\int f^n(x)\,f'(x)\,dx =$ (A) $f^n(x)\,f''(x)$ (B) $f^n(x)$ (C) $\frac{f^2(x)}{2}$ (D) $\frac{f^{n+1}(x)}{n+1}$

(6) $\int \ell nx . \frac{1}{x}\,dx =$

(A) $\frac{(\ell nx)^2}{2}$ (B) $\ell n(\ell n\,x)$ (C) $\ell nx\,\ell n\,x$ (D) $\frac{(\ell nx)^2}{2}\ell nx$

(7) $\int_a^b \frac{1}{x}\,dx =$ (A) $\ell n\left(\frac{a}{b}\right)$ (B) $\ell n\left(\frac{b}{a}\right)$ (C) $\frac{1}{b}-\frac{1}{a}$ (D) $b-a$

(8) The distance of point $(-1, 2)$ from $x-$axis:- (A) -2 (B) -1 (C) 1 (D) 2

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(A) $y = x$ (B) $y = 2x$ (C) $y = -x$ (D) $2x = 4y$

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(19) $\frac{d}{dx}(a^x) =$ (A) $x\,a^{x-1}$ (B) a^x (C) $\frac{a^x}{\ell na}$ (D) $a^x\ell na$

(20) $\frac{d}{dx}\log(5x) =$ (A) $\frac{1}{x}$ (B) $\frac{1}{5x}$ (C) $\frac{1}{x} \times 5$ (D) $\frac{1}{x\ell n5}$

BOARD OF INTERMEDIATE AND SECONDARY EDUCATION, MULTAN

OBJECTIVE KEY FOR INTER (PART I / II) Supply Examination, 2016.

Name of Subject MATH P-II Session _____

Q. Nos.	Paper Code 8191	Paper Code 8193	Paper Code 8195	Paper Code 8197
1.	A	D	A	A
2.	C	D	B	B
3.	C	B	D	B
4.	D	B	C	C
5.	A	D	A	D
6.	A	A	D	A
7.	B	C	D	B
8.	B	C	B	D
9.	C	D	B	C
10.	D	A	D	A
11.	A	A	A	D
12.	B	B	C	D
13.	D	B	C	B
14.	C	C	D	B
15.	A	D	A	D.
16.	D	A	A	A
17.	D	B	B	C
18.	B	D	B	C
19.	B	C	C	D
20.	D	A	D	A

سرٹیفکیٹ بابت تصحیح سوالیہ پرچہ/مارکنگ Key

ہم نے مضمون: ریاضی پرچہ II گروپ: ___ سکیم ___ انٹر سالانہ/ضمنی امتحان 2016ء کا سوالیہ پرچہ انشائی (Subjective & Objevtive) کو بنظر عمیق چیک کرلیا ہے یہ پرچہ سلیبس کے عین مطابق Set کیا گیا ہے۔اس سوالیہ پرچہ میں کوئی غلطی نہ ہے۔ہم نے سوالیہ پرچہ کا اردو اور انگریزی Version بھی چیک کرلیا ہے یہ Version آپس میں مطابقت رکھتے ہیں اور سلیبس (Syllabus) کے مطابق بھی ہیں۔نیز اس پرچہ کی Key کی بابت بھی تصدیق کی جاتی ہے کہ یہ بھی درست بنائی گئی ہے۔اس میں بھی کسی قسم کی کوئی غلطی نہ ہے۔ مزید یہ کہ ہم نے Key بنانے سے متعلق دفتر کی جانب سے تیارہ کردہ ہدایات وصول کر کے ان کا بغور مطالعہ کرلیا ہے اور ان کی روشنی میں Key بنائی۔

PREPARED & CHECKED BY

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ثانوی و اعلیٰ ثانوی تعلیمی بورڈ، ملتان

گروپ ______ پرچہ II مضمون MATH تاریخ 03.11.2016

جنرل ہدایات برائے مارکنگ Key نیو سکیم / اولڈ سکیم (مارکنگ سکیم)

انٹر پارٹ فرسٹ / سیکنڈ سپلیمنٹری امتحان 2016ء

SECTION — I

Q. No. 2

(i) finding x and $f'(x)$ 1+1 M.
(ii) Rationalization and simplication 1+1 M.
(iii) $x^\circ = \pi/180$, answer 1+1 M.
(iv) δy and dy/dx 1+1 M.
(v) Finding dy/dx 2 M.
(vi) Finding dy/dx 2 M.
(vii) Differentiation and finding dy/dx 1+1 M.
(viii) Differentiation and using chain rule 1+1 M.
(ix) Applying formula and simplification 1+1 M.
(x) Differentiation and chain rule 1+1 M.
(xi) Differentiation and using formula 1+1 M.
(xii) Finding $f'(x)$ and interval 1+1 M.

Q. No. 3

(i) Complete solution 2 M.
(ii) Division and integration 1+1 M
(iii) putting $x = a \sin\theta$ and integration 1+1 M.
(iv) using formula and integration 1+1 M.
(v) Complete solution 2 M
(vi) Completing square and integration 1+1 M.
(vii) Integration and use of limits 1+1 M.
(viii) Integration and use of limits 1+1 M.
(ix) Integration and use of limits 1+1 M.
(x) Separation of variables and integration 1+1 M.
(xi) Table of values and graph 1+1 M.
(xii) graphing and corner points 1+1 M.

① Saeed Ahmad [signature]
② CH. Yousaf [signature]
③ Kazim Ali Talib [signature]
④ Noorullah [signature]

general instructions

ثانوی و اعلیٰ ثانوی تعلیمی بورڈ، ملتان

تاریخ: 03-11-16 مضمون: ریاضی پرچہ: II گروپ: I

جنرل ہدایات برائے مارکنگ Key نیو سکیم / اولڈ سکیم (مارکنگ سکیم)

انٹرپارٹ فرسٹ / سیکنڈ سالانہ / ضمنی امتحان 2016ء

Q. NO.4

(i) Apply formula and finding inclination (1+1)

(ii) Find Slopes and Result. (1+1)

(iii) finding $y = \frac{1}{2}x + \frac{11}{4}$ (2)

(iv) Finding the pt (-2,3) is above or below (2)

(v) Apply Formula and find angle (1+1)

(vi) finding Radius (2)

(vii) Find the position of pt.(5,6) (2)

(viii) Find foeus and vertex (1+1)

(ix) Find a and b. Find eq. of ellipse. (1+1)

(x) Find magnitude and required result. (1+1)

(xi) For $\underline{u} \cdot \underline{v} = 0$ and find α. (1+1)

(xii) For $\underline{a} \times \underline{b} = \begin{vmatrix} i & j & u \\ 2 & -6 & -3 \\ 4 & 3 & -1 \end{vmatrix}$ = (1)

and required result = (1)

(xiii) Apply $\underline{a} \cdot \underline{b} \times \underline{c} = \begin{vmatrix} 1 & -2 & 3 \\ -2 & 3 & -4 \\ 1 & -3 & 5 \end{vmatrix}$ = (1)

required result $\underline{a} \cdot \underline{b} \times \underline{c} = 0$ (1)

(1) Saeed Ahmad

(2) CH. Yousaf

(3) Usman Ali Tahir

(4) Noor Ullah

general instructions

ثانوی و اعلیٰ ثانوی تعلیمی بورڈ، ملتان

مورخہ: 03.11.2016 مضمون: MATH پرچہ: II گروپ:

جنرل ہدایات برائے مارکنگ Key نیو سکیم / اولڈ سکیم (مارکنگ سکیم)

انٹر پارٹ فرسٹ / سیکنڈ سالانہ / ضمنی امتحان 2016ء

SECTION - II

Q.5 (a) Finding $f(a)$, $f(a+h)$, Simplification 2+3 m.

(b) finding dy/dx 3 m and proof 2 m.

Q.6 (a) Integration 3 m and finding constant and answer 2 m.

(b) Complete solution 5 m.

Q.7 (a) Integration 3 m and limit, answer 2 m.

(b) Finding Feasible points 3 m and proving minimization 2 m.

Q.8 (a) using points A and B 2 m.
Remaining solution 3 m.

(b) using triangle law 3 m
value of z 2 m.

Q.9 (a) using definition 2 m
Simplication 3 m.

(b) writing unit vectors 2 m
proving formula 3 m.

(1)

(2)

(3)

(4)

general instructions