

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, SAHIVAL

SUBJECT: Mathematics EXAM 2nd Annual 2022 CLASS: II-Y
 GROUP: 01 DATE: 07-12-22

(GENERAL INSTRUCTIONS FOR MARKING KEY)

By given Condition

$$S = x^2 + (20-x)^2$$

$$\frac{dS}{dx} = 2x + 2(20-x)(-1)$$

$$= 2x - 40 + 2x$$

$$= 4x - 40$$

$$\text{put } \frac{dS}{dx} = 0$$

$$4x - 40 = 0 \quad (1M)$$

$$\text{again } \frac{d^2S}{dx^2} = 4$$

$$\text{at } x=10, \quad \frac{d^2S}{dx^2} = 4 > 0$$

$\therefore$ Sum will be minimum.

two parts are

$$10, 10 \quad (1M)$$

XII

$$y = \sin 3x$$

$$y_1 = 3 \cos 3x$$

$$y_2 = -9 \sin 3x \quad (1M)$$

$$y_3 = -27 \cos 3x$$

$$y_4 = 81 \sin 3x \quad (1M)$$

$$Q.3 \quad (i) \quad \frac{1}{-2} \int (a-2x)^{\frac{3}{2}} (-2) dx \quad (1M)$$

$$= \frac{1}{-2} \frac{(a-2x)^{\frac{5}{2}}}{\frac{5}{2}} + C$$

$$= -\frac{1}{5} (a-2x)^{\frac{5}{2}} + C \quad (1M)$$

$$(ii) \quad 4x^3 dx + 2y dy = x^2 y dy + y^2 dx$$

$$(2y - 2xy) dy = (y^2 - 4x^3) dx$$

$$2y(1-x) dy = (y^2 - 4x^3) dx \quad (1M)$$

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تم نے درج بالا سائنچر (انتخابی + سرکاری) اور علامات کے حوالے سے مکمل طور پر تصدیق کر لی ہے۔ کسی قسم کی کوئی غلطی نہیں ہے۔