ARMY BURN HALL COLLEGE FOR GIRLS ABBOTTABAD

ENTRANCE TEST: MATHEMATICS 2022

NAME: _____   **CLASS:** JC

TOTAL MARKS: 60   **TIME:** 1 HOUR

Attempt any "SIX" questions. All questions carry equal marks.

Q1: If $f(x) = \frac{1}{2}x(x-1)$.   **[10]**

    Evaluate
    $F(5) - F(4)$ And $F(x-1)$.

Q2: Solve the following
    a) If x is directly proportional to y and $x - 4.5$ when $y = 3$, find: **[5]**
        i. An equation connecting x and y
        ii. The value of x when $y = 6$.
    b) Eight men can build a bridge in 12 days. Find the time taken for   **[5]**
    6 men to build the same bridge state the assumption made.

Q3: Solve the following
    a) solve the following pair of simultaneous equation.   **[5]**
    $x - y = -3$
    $x - 2y = -1$
    b) 8kg of potatoes and 5kg of carrots cost $28 whereas 2kg of potatoes   **[5]**
    and 3kg of carrots cost $11.20. Find the cost of 1kg of each item.

Q4: Solve the following:
    a) Solve the following equation.   **[5]**
    $3x^2 + 49x + 60 = 0$
    b) The perimeter of a rectangular composite is 64m, and its area is $207m^2$.   **[5]**
    Find the length and the breadth of composite.

Q5: A solid is made up of a cylinder of diameter 10cm and height 3cm. and another
    bigger cylinder of diameter 25cm and height 2cm.
    Find:
        i. The Volume   **[5]**
        ii. The total surface area of the solid.   **[5]**

Q6: Find the
    a) Volume   **[5]**
    b) Surface area of given prism   **[5]**

Q7: Solve the following

    a) Solve the following equation   **[5]**
    $x^2 - 12x + 9 = 0$ (by using quadratic formulae)
    b) A wire of length 200cm is cut into two parts and each part is bent to   **[5]**
    form a square. If the area of a larger square is 9 times that of the
    smaller square. Find the perimeter of the larger square.