All Victoria University of Bangladesh
Mid Term Assessment
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Program : BBA

Batch : 46th

COURSE CODE : MAT 102

COURSE TITLE : Basic Algebra

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Course code: MAT, 102

Answer to the Q.N (4)

$122 + 120 + 116 + \cdots + 80$

First term, $a = 122$

common distance, $d = 120 - 122$

$= -2$

number of the term $= n$

Then, $a + (n-1)d = 80$

$= 122 + (n-1) - 2 = 80$

$= 122 - 2n + 2 = 80$

$= 124 - 2n = 80$

$= -2n = 80 - 124$

$= -2n = -44$

$= n = \frac{-44}{-2}$

$\therefore = 22$

Hence

The required sum

$$= \frac{n}{2}\{2a + (n-1)d\}$$

$$= \frac{22}{2}\{2 \cdot 122 + (22-1)(-2)\}$$

$$= 11\{244 + 21 \cdot (-2)\}$$

$$= 11(244 - 42)$$

$$= 11 \times 202$$

$$= 2222$$

(3) $62+60+58+\cdots+40$

1st term, $a = 62$

common distance, $d = 60-62$

$= -2$

Let number of the term $= n$

Then,

$$a+(n-1)d = 40$$

$$\Rightarrow 62+(n-1)-2 = 40$$

$$\Rightarrow 62-2n+2 = 40$$

$$\Rightarrow 64-2n = 40$$

$$\Rightarrow -2n = 40-64$$

$$\Rightarrow n = \frac{-24}{-2}$$

$$\Rightarrow n = 12$$

$\therefore$ 1...

Hence,

The Required Sum

$$= \frac{n}{2}\{2a + (n-1)d\}$$

$$= \frac{12}{2}\{2 \cdot 62 + (12-1)-2\}$$

$$= 6\{124 + 11(-2)\}$$

$$= 6(124 - 22)$$

$$= 6 \times 102$$

$$= 612$$

(1) Given here,

$A = \{a, b, c, d\}$

$B = \{b, d, e, f\}$

$C = \{a, c, g, h\}$

(i) $A - B$

$= \{a, b, c, d\} - \{b, d, e, f\}$

$= \{a, c, d\}$

(ii) $B - C$

$= \{b, d, e, f\} - \{a, c, g, h\}$

$= \{b, d, e, f\}$

(iii) $B - B$

$= \{b, d, e, f\} - \{b, d, e, f\}$

$= \{\}$

② given here,

$A = \{a, b, c, d, e, f\}$

So, $P(A) = \{\emptyset, \{a\}, \{b\}, \{c\}, \{d\}, \{e\}, \{f\}, \{a,b\}, \{a,c\}, \{a,d\}, \{a,e\}, \{a,f\}, \{b,c\}, \{b,d\}, \{b,e\}, \{b,f\}, \{c,d\}, \{c,e\}, \{c,f\}, \{d,e\}, \{d,f\}, \{e,f\}, \{a,b,c\}, \{a,b,d\}, \{a,b,e\}, \{a,b,f\}, \{a,c,d\}, \{a,c,e\}, \{a,c,f\}, \{a,d,e\}, \{a,d,f\}, \{a,e,f\}, \{b,c,d\}, \{b,c,e\}, \{b,c,f\}, \{b,d,e\}, \{b,d,f\}, \{b,e,f\}, \{c,d,e\}, \{c,d,f\}, \{c,e,f\}, \{d,e,f\}, \{a,b,c,d\}, \{a,b,d,e\}, \{a,b,c,f\}, \{a,b,d,e\}, \{a,b,d,f\}, \{a,b,e,f\}, \{a,c,d,e\}$ $\{a,c,d,f\}$ $\{a,c,e,f\}, \{a,d,e,f\}, \{b,c,d,e\}, \{b,c,d,f\}, \{b,c,e,f\}, \{b,d,e,f\}, \{c,d,e,f\}, \{a,b,c,d,e\}, \{a,b,c,d,f\}, \{a,b,c,e,f\}, \{a,b,d,e,f\}, \{a,c,d,e,f\}, \{b,c,d,e,f\}, \{a,b,c,d,e,f\}\}$