

BOARD OF INTERMEDIATE & SECONDARY EDUCATION, SAKHAWAT

SUBJECT: MATH EXAM 2nd Annual 2022 CLASS: Inter P-I
 GROUP: I DATE: 21-12-22

P/4

(GENERAL INSTRUCTIONS FOR MARKING KEY)

3. (i) $\frac{7x+25}{(x+3)(x+4)} = \frac{A}{x+3} + \frac{B}{x+4}$

$7x+25 = A(x+4) + B(x+3)$ (1M)

For $x = -3$; $A = 4$

For $x = -4$; $B = 3$

$\frac{7x+25}{(x+3)(x+4)} = \frac{4}{x+3} + \frac{3}{x+4}$ (1M)

(ii) $\frac{x^2}{(x-2)(x-1)^2} = \frac{A}{(x-2)} + \frac{B}{(x-1)} + \frac{C}{(x-1)^2}$ (2M)

(iii) $a_1 = 2$; $d = -3$

Let general term in A.P. = a_n

$a_n = a_1 + (n-1)d$ (1M)

$a_n = 2 + (n-1)(-3)$

$a_n = -3n + 5$ (1M)

(iv) Let 5, 8 are two A.P.'s b/w a and b

$\Rightarrow a, 5, 8, b$ is A.P. (1M)

$\frac{a+8}{2} = 5 \Rightarrow a = 2$

$\frac{5+b}{2} = 8 \Rightarrow b = 11$ (1M)

(v) Let $a = -2$; $b = 8$

G.M. b/w a and b is defined as

$G = \pm \sqrt{ab}$ (1M)

$G = \pm \sqrt{(-2)(8)}$

$G = \pm 4i$ (1M)

(vi) $y = \frac{x}{2} + \frac{x^2}{4} + \frac{x^3}{8} + \dots$

L.H.S of (i) is infinite geometric series where

$a_1 = \frac{x}{2}$; $r = \frac{a_2}{a_1} = \frac{x}{2}$

$y = \frac{a_1}{1-r}$

$y = \frac{\frac{x}{2}}{1-\frac{x}{2}} = \frac{x}{2-x}$ (1M)

$\Rightarrow 2y - xy = x$

$\Rightarrow x = \frac{2y}{1+y}$ (1M)

(vii) $\frac{1}{2}, \frac{1}{5}, \frac{1}{8}, \dots$ H.P.

$2, 5, 8, \dots$ A.P.

$a_1 = 2$; $d = a_2 - a_1 = 3$

PREPARED BY

Sr.#	Name	Desig.	Institution	Mobile No.	Signature
1	Raja Sekander Mehmood	A.P.	E.P.G.C. Suhl	0322 7043348	M. Sult
2	115	A.P.	"	03015100339	Ph

RE-CHECKED BY

Sr.#	Name	Desig.	Institution	Mobile No.	Signature
1	Asghar Ali	Lec.	G.P.G.C. Suhl	0311 6629349	A.S. Ali
2	115	A.P.	"	03007696228	M. N. S