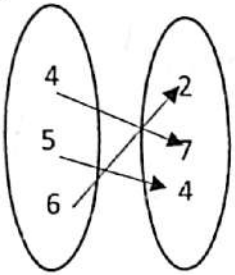
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Marks Distribution 6+5+4

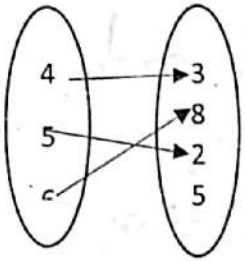
1.(a)If $R=\{(a,b),(b,c),(a,c)\}$ and $S=\{(3,7),(4,8),(5,9),(7,11)\}$ Which Relation is a Function and why?

(b) Classify the Relation as Injective, Surjective and Bijective Function and Why.

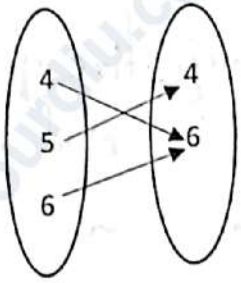
i) A B



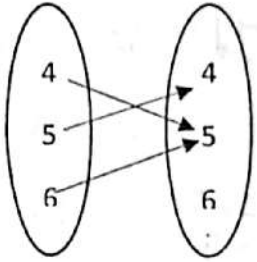
ii) A B



iii) A B



iv) A B



2. Test the Differentiability of $f(x)=\begin{cases} 5; & \text{when } x<0 \\ 2+\sin x; & \text{when } 0\le x<\frac{\pi}{2} \\ 3+\left(x-\frac{\pi}{2}\right)^2; & \text{when } x\ge\frac{\pi}{2} \end{cases}$ at $x=\frac{\pi}{2}$

3.

Solve the equation $4x^3-24x^2+23x+18=0$ using Remainder theorem