


### CHEMISTRY

Match the species in Column II which are weaker base than species given in Column I.

Column I		Column II	
(A)	$HS^-$	(P)	
(B)	$CH_3-CO-\overset{-}{C}H-CO-CH_3$	(Q)	$F^-$
(C)	$OH^-$	(R)	$CN^-$
(D)	$NH_2^-$	(S)	$CH_3-COO^-$
		(T)	$CH_3S^-$

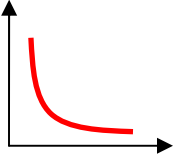
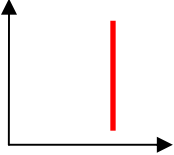
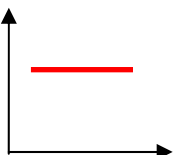
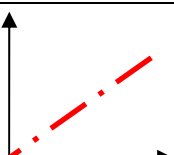
### MATHEMATICS

Match Column II with Column I.

Column I		Column II	
(A)	A certain function $f(x)$ satisfies $f(x) + 2f(6-x) = x$ for all real numbers $x$ . The value of $f(1)$ is	(P)	1
(B)	If $f(x)$ is continuous and differentiable over $[-2, 5]$ and $-4 \leq f'(x) \leq 3$ for all $x$ in $(-2, 5)$ then the greatest possible value of $f(5) - f(-2)$ is	(Q)	2
(C)	Let $f(x) = x^n  x $ for all real numbers $x$ . Then, $f(x)$ is differentiable at the origin if $n$ is equal to	(R)	3
(D)	The maximum value of $f(x)$ where $f(x) = \int_0^x \sin \{x(1-x)\} dx$ , occurs at $x =$	(S)	4
		(T)	21

PHYSICS

The graphs in Column I have one of p, V or T on the axes (non – repeating). Match these to the possible process in Column II.

Column I		Column II	
(A)		(P)	Isotherm
(B)		(Q)	Adiabatic
(C)		(R)	Isochoric
(D)		(S)	Isobaric
		(T)	None