KENDRIYA VIDYALAYA SANGATHAN BHOPAL REGION

CBT CLASS XI MATHS JULY-2026

CHAPTER-1 : SETS

Sr.No	Question	Marks
	Case Study 1 Two non-empty sets A and B are given by A = {x: x is a letter in " I LOVE MATHEMATICS"} B = {x: x is a letter in " I LOVE STATISTICS"} ***Based on the above information, answer the following questions (1 to 5) :-***	
1	Find the number of proper subsets of A (a) $2^{11} - 1$ (b) 2^{11-1} (c) 2^{11} (d) $2^{11} + 1$	1
2	Find the number of subsets of B (a) $2^{9} - 1$ (b) 2^{9} (c) 2^{9-1} (d) $2^{9} + 1$	1
3	AUB is given by (a) {I,L,O,V,E,M,A,T,H,S} (b) {I,L,O,V,E,M,A,T,H,C} (c) {I,L,O,V,E,M,A,T,H,C,S} (d) {I,L,O,V,E,S,T,A,C}	1
4	A∩B is given by (a) {I,L,O,V,E,M,A,T,H,S} (b) {I,L,O,V,E,M,A,T,H,C} (c) {I,L,O,V,E,M,A,T,H,C,S} (d) {I,L,O,V,E,S,T,A,C}	1
5	If P⊂Q then P∩Q is (a) P (b) Q (c) U (d) Φ	1
	Case Study 2 The given table shows the 10 most famous engineering private colleges of India with their respective fee structure of 4 years Bachelor of Technology course. The Budget of Ram is 6 lakhs and budget of Sri is 4 lakhs. ***Based on the above information, answer the following questions (6 to 9) :-***	

Private collage	Fees structure (4 Years course)
BITS (Birla Institute of Technology & Science)	11.57 Lakhs
SRM University	9 Lakhs
MIT (Manipal Institute of Technology)	7 Lakhs
AMITY Univeersity	10 Lakhs
JIIT (Jaypee Institute of Information Tecnology)	6 Lakhs
LPU University	6.8 Lakhs
TIT (Thaper Institute Of Technology)	8 Lakhs
KIT(Kalinga Institute Of Technology)	4 Lakhs
VIT (Vellore Institute Of Technology)	9 Lakhs
Chandigarh University	3.3 Lakhs

6	Sri has taken an education loan of 3 lakhs to increase his overall budget. Find the set of college in which Sri can take admission but Ram cannot. (a) { MIT, JIIT, LPU University, KIT, Chandigarh University} (b) { MIT, JIIT, LPU University, KIT, Chandigarh University, SRM University, VIT } (c) { MIT, LPU University } (d) { MIT, JIIT, LPU University }	1
7	Ram has taken an education loan of 2 lakhs to increase his overall budget. Find the number of colleges in which he can take admission after raising his budget. (a) 8 (b) 6 (c) 4 (d) 10	1
8	If Sri and Ram want to take admission in the same college. Find the set of all colleges in which both Sri and Ram can take their admission. (a) { MIT, JIIT, LPU University, KIT, Chandigarh University, SRM University, VIT } (b) { MIT, JIIT, LPU University, KIT, Chandigarh University } (c) { KIT, Chandigarh University } (d) { JIIT, LPU University, KIT, Chandigarh University }	1
9	Sri has a total budget of 4 lakhs and she wanted admission in the famous college. Will she able to take admission in the colleges given in table? If yes find the set of college in which she can take admission. (a) NO (b) YES, { TIT, KIT, Chandigarh University } (c) { TIT, Chandigarh University } (d) YES, { KIT, Chandigarh University }	1
10	For any set A, **(A')'** is equal to (a) A (b) A' (c) U (d) Φ	1

Answer Key

Case study 1	1. (a) $2^{11} - 1$ (number of proper subsets of a set with n elements = $2^n - 1$) **2.** (b) 2^9 (number of proper subsets of a set with n elements = 2^n) **3.** (c) {I,L,O,V,E,M,A,T,H,C,S} (If A⊂B then AUB = B) **4.** (d) {I,L,O,V,E,S,T,A,C} **(**If A⊂B then A∩B = A*)* **5.** (a) P **(**If P⊂Q then P∩Q = P*)*
Case Study 2	6. (c) { MIT, LPU University } (*According to question* collage fee > 6 Lakhs but ≤ 7 Lakhs) 7. (b) 6 (*According to question* collage fee ≤ 8 Lakhs) 8. (c) { KIT, Chandigarh University } (*According to question* collage fee ≤ 4 Lakhs) 9. (d) YES, { KIT, Chandigarh University } (*According to question two* collages in a table with fee ≤ 4 Lakhs)
	10. (a) A (complement of complement of a set is equal to the set)

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