

JEE MAIN D- AND F-BLOCK ELEMENTS — OXIDES AND OXO-ANIONS OF TRANSITION METALS — PYQS

Max. Marks: 16

Questions: 4

Section A (MCQ) — 3 questions

Q.1 Given below are some of the statements about Mn and Mn_2O_7 . Identify the correct statements.

- A. Mn forms the oxide Mn_2O_7 , in which Mn is in its highest oxidation state.
- B. Oxygen stabilizes the Mn in higher oxidation states by forming multiple bonds with Mn.
- C. Mn_2O_7 is an ionic oxide.
- D. The structure of Mn_2O_7 consists of one bridged oxygen.

Choose the **correct** answer from the options given below :

[JEE Main 2026 (Online) 21st January Evening Shift]

- (1) A, B, C and D (2) A, B and D Only
(3) A, B and C Only (4) A, C and D Only

Scan or tap for the full solution



Q.2 'X' is the number of acidic oxides among VO_2 , V_2O_3 , CrO_3 , V_2O_5 and Mn_2O_7 . The primary valency of cobalt in $[\text{Co}(\text{H}_2\text{NCH}_2\text{CH}_2\text{NH}_2)_3]_2(\text{SO}_4)_3$ is Y. The value of $X + Y$ is _____.

[JEE Main 2025 (Online) 7th April Evening Shift]

- (1) 3 (2) 4 (3) 2 (4) 5

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Q.3 The amphoteric oxide among V_2O_3 , V_2O_4 and V_2O_5 , upon reaction with alkali leads to formation of an oxide anion. The oxidation state of V in the oxide anion is :

[JEE Main 2025 (Online) 28th January Evening Shift]

- (1) +4 (2) +5 (3) +3 (4) +7

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Section B (Numerical) — 1 question

Q.4 Among the following oxides of 3d elements, the number of mixed oxides are _____.

Ti_2O_3 , V_2O_4 , Cr_2O_3 , Mn_3O_4 , Fe_3O_4 , Fe_2O_3 , Co_3O_4

[JEE Main 2026 (Online) 22nd January Evening Shift]

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ANSWER KEY

Section A (MCQ) — 3 questions

Ques.	1	2	3								
Ans.	2	4	2								

Section B (Numerical) — 1 question

Ques.	4										
Ans.	3										