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2. OXIDATION AND REDUCTION

SOLUTIONS

TEACHING TASK

JEE MAIN LEVEL QUESTIONS

1. The oxidation number of sulfur is not a whole number in:
A) Sodium tetrathionate ($Na_2S_4O_6$) B) Sulfur dioxide (SO_2)
C) Sulfur hexafluoride (SF_6) D) Sulfite ion (SO_3^{2-})

Answer:A

Solution:In $Na_2S_4O_6$, sulfur has an average oxidation state of +2.5 (fractional).
Structure: Two central S atoms have 0 oxidation state (S-S bond), while the other two S atoms have +5 (bonded to O).
$Na_2S_4O_6=2(1)+4S+6(-2)=0$
$4S=12-2$
$S=10/4=2.5$

2. The oxidation state of nitrogen is maximum in:
A) Nitrous oxide (N_2O) B) Nitric acid (HNO_3)
C) Ammonium ion (NH_4^+) D) Nitric oxide (NO)

Answer:B

Solution:A)$N_2O=2N-2=0$
$2N=2 \rightarrow N=2/2=1$
B)$HNO_3=1+N+3(-2)=0 \rightarrow N=+5$
C)$NH_4^+ =N+4(1)=1$
$N=1-4=-3$
D)$NO=N-2=0 \rightarrow N=2$

3. The oxidation state of oxygen is minimum in:
A) Potassium superoxide (KO_2) B) Ozone (O_3)
C) Water (H_2O) D) Oxygen difluoride (OF_2)

Answer:A

Solution:A)$KO_2=2(O)+1=0 \rightarrow 2(O)=-1 \rightarrow O=-1/2$.
In superoxides, each oxygen atom has an oxidation state of -1/2. This is the lowest oxidation state commonly seen for oxygen.
B)$O_3=0$
C)$H_2O=2(1)+O=0 \rightarrow O=-2$.
In water, each oxygen atom has an oxidation state of -2. While this is not the absolute lowest possible oxidation state for oxygen, it is the typical oxidation state in most oxygen compounds.
D)$OF_2=O+2(-1)=0 \rightarrow O=+2$

4. The highest oxidation number of chlorine is found in:
A) Sodium hypochlorite (NaOCl) B) Chlorine dioxide (ClO_2)
C) Perchloric acid ($HClO_4$) D) Dichlorine monoxide (Cl_2O)

Answer:C

Solution:A)NaOCl=1+(-2)+Cl=0 $\rightarrow$ Cl=2-1=0

B)ClO_2=Cl+(-2)=0 $\rightarrow$ Cl=2
C)$HClO_4$=1+Cl+4(-2)=0 $\rightarrow$ Cl=8-1=+7
D)Cl_2O=2Cl-2=0 $\rightarrow$ 2Cl=2 $\rightarrow$ Cl=2/2=1

5. The element that always exhibits an oxidation state of -1 in its compounds is:
A) Fluorine B) Oxygen C) Bromine D) Nitrogen

Answer:A

Solution:Fluorine is the most electronegative element and always has -1 oxidation state.

6. In which of the following does phosphorus have a fractional oxidation number?
A) PCl_5 B) H_3PO_3 C) P_4O_{10} D) $Na_4P_2O_7$

Answer:D

Solution:A) PCl_5=P+5(-1)=0 $\rightarrow$ P=+5
B) H_3PO_3=3(1)+P+3(-2)=0 $\rightarrow$ P=6-3=3
C) P_4O_{10} =4P+10(-2)=0 $\rightarrow$ 4P=20 $\rightarrow$ P=20/4=5
D) $Na_4P_2O_7$=4(1)+2P+7(-2)=0 $\rightarrow$ 2P=14-4 $\rightarrow$ 2P=10 $\rightarrow$ P=10/2 $\rightarrow$ P=5
Pyrophosphate actually has two nonequivalent P atoms in some representations, where:One P is in +5, another in +4, making the average oxidation state fractional:Average=(5+4)/2=+4.5

7. Which of the following statements is incorrect?
A) Oxygen has a -2 oxidation state in most compounds.
B) In peroxides, oxygen has an oxidation state of -1.
C) In superoxides, oxygen has an average oxidation state of -½.
D) In dioxygen difluoride, oxygen has a -2 oxidation state.

Answer:D

Solution:O_2F_2: O = +1 (F is -1, total = 0).
Correct statements:
A) O is -2 in most compounds.
B) Peroxides (O_2^{2-}): O = -1.
C) Superoxides (O_2^-): O = -½.

8. During the conversion of $Cr_2O_7^{2-}$ to Cr^{3+}, the oxidation state of chromium:
A) increases B) decreases C) stays the same D) becomes zero

Answer:B

Solution:$Cr_2O_7^{2-}$ $\rightarrow$ 2Cr+7(-2)= -2 $\rightarrow$ 2Cr= -2+14 $\rightarrow$ 2Cr=12 $\rightarrow$ Cr=12/2=+6
In Cr^{3+},Cr oxidation number=+3

9. In which of the following compounds is the oxidation number of carbon +4?
A) Methane (CH_4) B) Carbon monoxide (CO)
C) Carbon dioxide (CO_2) D) Ethanol (C_2H_5OH)

Answer:B

Solution:CO_2: C = +4 (O = -2).
Others:
CH_4: -4 ,CO: +2,C_2H_5OH: -2 (avg.)

10. If an element in the +2 oxidation state gains one electron, its new oxidation state is:
A) +3 B) +1 C) 0 D) -1

Answer:B

Solution:Gain of 1 electron reduces oxidation state by 1: +2 $\rightarrow$ +1.

11. The oxidation number and covalency of phosphorus in PCl_5 are:

A) +5 and 3 B) +5 and 5 C) 0 and 3 D) +3 and 3

Answer:B

Solution:PCl_5: P = +5 (Cl = -1).

Covalency = 5 (5 bonds formed by P).

12. The total oxidation number of carbon atoms in ethanoic acid (CH_3COOH) is:

A) 0 B) +4 C) +2 D) -2

Answer:A

Solution:$CH_3COOH=2C+4-2-2=0 \rightarrow 2C=0 \rightarrow C=0$

13. In potassium dichromate ($K_2Cr_2O_7$), the oxidation state of chromium is:

A) +2 B) +3 C) +6 D) +4

Answer:C

Solution:Let Cr = x.

$K_2Cr_2O_7=2(1)+2x+7(-2)=0$

$2x=14-2 \rightarrow x=12/2=+6$

14. In the compound sodium hydride (NaH), the oxidation number of hydrogen is:

A) +1 B) -1 C) 0 D) +2

Answer:B

Solution:NaH=+1+H=0

H= -1

15. Which of the following reactions is a redox reaction?

A) $NaOH + HCl \rightarrow NaCl + H_2O$ B) $AgNO_3 + NaCl \rightarrow AgCl + NaNO_3$

C) $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$ D) $NH_3 + H_2O \rightarrow NH_4^+ + OH^-$

Answer:C

Solution:Zn (0) $\rightarrow$ Zn^{2+} (+2): Oxidation.

Cu^{2+} (+2) $\rightarrow$ Cu (0): Reduction.

JEE ADVANCED LEVEL QUESTIONS

Multi correct answer type:

16. The oxidation number of manganese is NOT +7 in:

A) $KMnO_4$ B) MnO_2 C) $MnCl_2$ D) Mn_2O_3

Answer:B,C,D

Solution:

A) $KMnO_4 =1+Mn+4(-2)=0$

Mn=8-1=+7

B) $MnO_2 =Mn+2(-2)=0 \rightarrow Mn=4$

C) $MnCl_2 =Mn+2(-1)=0 \rightarrow Mn=2$

D) $Mn_2O_3=2Mn+3(-2)=0 \rightarrow Mn=6/2=3$

17. The reaction $Zn + CuSO_4 \rightarrow ZnSO_4 + Cu$ is NOT an example of:

A) Oxidation B) Reduction C) Redox reaction D) Combination reaction

Answer:D

Solution:A) Oxidation:$Zn \rightarrow Zn^{2+} + 2e^-$ (oxidation occurs).

B) Reduction:$Cu^{2+} + 2e^- \rightarrow Cu$ (reduction occurs).

C) Redox reaction:

Both oxidation and reduction occur (Zn is oxidized, Cu^{2+} is reduced).
D) Combination reaction:
Incorrect. This is a single displacement reaction, not a combination (where two reactants form one product).

Statement Type/Assertion and Reason Type:

18. Assertion (A): Oxygen shows an oxidation state of –2 in most of its compounds.
Reason (R): Oxygen is highly electronegative and can gain two electrons to achieve a stable octet.

Answer:A

Solution:Assertion (A) is true because oxygen typically has an oxidation state of –2 (e.g., H_2O, CO_2). Exceptions:–1 in peroxides (O_2^{2-}).
–½ in superoxides (O_2^-).
+1/+2 in OF_2/O_2F_2.
Reason (R) is true and explains (A): Oxygen's high electronegativity allows it to gain 2 electrons (achieving octet), resulting in –2 oxidation state.

19.Assertion (A): The oxidation number of hydrogen is –1 in metal hydrides like LiH.
Reason (R): In metal hydrides, hydrogen behaves as a more electronegative element than the metal.

Answer:A

Solution:Assertion (A) is true: In ionic hydrides (e.g., LiH, NaH), hydrogen has –1 oxidation state.
Reason (R) is true and explains (A): Hydrogen is more electronegative than alkali/ alkaline earth metals, so it gains 1 electron (forming H?), resulting in –1 oxidation state.

20.Assertion (A): The oxidation number of sulfur in H_2SO_4 is +6.
Reason (R): The total oxidation number of all atoms in a neutral compound must equal zero.

Answer:B

Solution:Assertion (A) is true:
Let oxidation state of S = x
2(+1)+x+4(-2)=0
2+x-8=0
x=+6.
Reason (R) is true (neutral compounds have net oxidation number = 0), but it does not explain why S is +6. The explanation lies in S's bonding with highly electronegative O (–2).

Comprehension Type

21. In which of the following processes is sulfur oxidized?
A) $S \rightarrow SO_2$ B) $SO_2 \rightarrow S$ C) $H_2S \rightarrow S$ D) $S \rightarrow H_2S$

Answer:A

Solution:Oxidation means an increase in oxidation number (loss of electrons).
Analyzing sulfur's oxidation state in each option:
A) $S \rightarrow SO2$:
S (elemental form): Oxidation state = 0.
SO_2: S = +4 (O = -2)
x+2(-2)=0 ?

x=+4).

Change: $\rightarrow$+4 (Oxidation)
B) $SO_2 \rightarrow S$:
SO_2: S = +4 $\rightarrow$ S: 0.
Change: +4 $\rightarrow$ 0 (Reduction)
C) $H_2S \rightarrow S$:
H_2S: S = -2 (H = +1)
2(+1)+x=0
x=-2).
S: 0.
Change: -2 $\rightarrow$ 0 (Oxidation) $\rightarrow$ (But not among the options where sulfur is oxidized to a higher state like in A).
D) $S \rightarrow H_2S$:
S: 0, H_2S: -2.
Change: 0 $\rightarrow$ -2 (Reduction)
22. In the reaction:
$Ca \rightarrow CaCl_2$,
the oxidation number of calcium:
A) Increases from 0 to +2 B) Decreases from +2 to 0
C) Does not change D) Increases from +1 to +2

Answer:A

Solution:Calcium (Ca) in elemental form: Oxidation state = 0.
Calcium in CaCl2:
Cl = -1
x+2(-1)=0 $\rightarrow$x=+2.
Change: 0 $\rightarrow$ +2 (Oxidation).
Conclusion: The oxidation number of calcium increases from 0 to +2 (loses 2 electrons).

Integer Type:

23. The number of electrons involved in the half-reaction of: $Fe^{2+} \rightarrow Fe^{3+}$ is _____.

Answer:1

Solution:The half-reaction shows the conversion of Fe^{2+} to Fe^{3+}.
Oxidation state change: +2 $\rightarrow$ +3 (loss of 1 electron).
Half-reaction:$Fe^{2+} \rightarrow Fe^{3+} + 1e^-$
Thus, 1 electron is involved.
24. The oxidation state of phosphorus in Na_3PO_4 is _____.

Answer:5

Solution:Na_3PO_4 =3(1)+P+4(-2)=0
P=8-3=5

Matrix Matching Type:

25.

List - I (Compound)	**List - II** (Oxidation no of sulphur)
A) $H_2S_2O_8$	1) + 1
B) H_2S	2) + 2

C) Na_2SO_3 3) + 6

D) S_2C_2 4) + 4

5) -2

6) $+7$

Answer:A-3,B-5,C-4,D-1

Solution:

A) $H_2S_2O_8 = 2(1)+2S+6(-2)+2(-1)=0 \rightarrow 2S=14-2 \rightarrow 2S=12 \rightarrow S=12/2=+6$

B) $H_2S = 2(1)+S=0 \rightarrow S=-2$

C) $Na_2SO_3 = 2(1)+S+3(-2)=0 \rightarrow S=6-2=4$

D) $S_2C_2 = 2S+2(-1)=0 \rightarrow 2S=2 \rightarrow S=+1$

LEARNERS TASK

CONCEPTUAL UNDERSTANDING QUESTIONS

1. The oxidation state of chlorine in $KClO_3$ is:
A) +3 B) +5 C) +7 D) –1

Answer:B

Solution:$KClO_3 = 1+Cl+3(-2)=0$

Cl=6-1=5

2. Nitrogen exhibits its lowest oxidation state in:
A) NH_3 B) N_2O C) NO_2 D) HNO_3

Answer:A

Solution:A) $NH_3 = N+3(1)=0 \rightarrow N=-3$

B) $N_2O = 2N+1(-2)=0 \rightarrow 2N=2 \rightarrow N=2/2=1$

C) $NO_2 = N+2(-2)=0 \rightarrow N=+4$

D) $HNO_3 = 1+N+3(-2)=0 \rightarrow N=6-1=5$

3. The oxidation number of carbon in C_2H_2 (ethyne) is:
A) +1 B) –1 C) 0 D) –2

Answer:B

Solution:$C_2H_2 = 2C+2(1)=0 \rightarrow 2C=-2 \rightarrow C=-2/2=-1$

4. The oxidation state of oxygen in KO_2 (potassium superoxide) is:
A) –1 B) –1/2 C) –2 D) 0

Answer:B

Solution:$KO_2 = 1+2x=0$

$2x=-1 \rightarrow x= -1/2$

5. In $KMnO_4$, the oxidation number of manganese is:
A) +4 B) +6 C) +7 D) +2

Answer:C

Solution:$KMnO_4 = 1+Mn+4(-2)=0$

Mn=8-1=+7

6. Oxidation number of chromium in $Cr_2O_7^{2-}$ is:
A) +6 B) +3 C) +4 D) +2

Answer:A

Solution:

$Cr_2O_7^{2-}$=2Cr+7(-2)=-2

2Cr=14-2 $\rightarrow$ 2Cr=12 $\rightarrow$ Cr=12/2=+6

7. In NO_3^-, the oxidation number of nitrogen is:

A) +3 B) +2 C) +5 D) +4

Answer:C

Solution:NO_3^- =N+3(-2)= -1

N=6-1=+5

8. In which of the following does phosphorus have an oxidation state of +3?

A) PCl_3 B) H_3PO_4 C) PCl_5 D) $H_4P_2O_7$

Answer:A

Solution:PCl3: Cl = -1

x+3(-1)=0 $\rightarrow$ x=+3

Others:

H_3PO_4: +5

PCl_5: +5

$H_4P_2O_7$: +5

9. The oxidation number of hydrogen is negative in:

A) H_2O B) NH_3 C) CH_4 D) NaH

Answer:D

Solution:

In metal hydrides (e.g., NaH), H = -1.

In other compounds (H_2O, NH_3, CH_4), H = +1.

10. Which of the following elements shows variable oxidation states?

A) Neon B) Iron C) Sodium D) Fluorine

Answer:B

Solution:Iron (Fe): Common states = +2, +3 (variable).

Others:

Neon: 0 (inert)

Sodium: +1 (fixed)

Fluorine: -1 (fixed)

JEE MAIN LEVEL QUESTIONS

11. The minimum oxidation state that sulphur can exhibit is:

A) –1 B) –2 C) 0 D) –3

Answer:B

Solution:Sulfur's lowest oxidation state is -2 (e.g., in H_2S or metal sulfides).

Higher states: 0 (elemental S), +2, +4, +6.

12. What is the oxidation number of carbon in methane (CH_4)?

A) +2 B) –4 C) –2 D) 0

Answer:B

Solution:CH_4=C+4(1)=0

C= -4

13. In which of the following compounds does oxygen have an oxidation state of –1?

A) CO_2 B) H_2O C) H_2O_2 D) NaOH

Answer:C

Solution:Peroxides (O_2^{2-}) like H_2O_2 have O = -1.
Others:CO_2: O = -2
H_2O: O = -2

NaOH: O = -2
14. The oxidation numbers of nitrogen in N_2, NH_3, and HNO_3 are respectively:
A) 0, –3, +5 B) –3, 0, +5 C) –3, +3, +5 D) 0, +3, –3
Answer:A
Solution:Oxidation number fo elementary form is Zero,N_2 =0
NH_3=N+3(1)=0
N=-3
HNO_3
1+N+3(-2)=0
N=6-1=5
15. When Br_2 reacts with hot concentrated NaOH, the oxidation numbers of bromine in the products are:
A) –1 and +5 B) 0 and –1 C) –1 and +1 D) +3 and –1
Answer:A
Solution: $3Br_2 + 6NaOH \rightarrow 5NaBr + NaBrO_3 + 3H_2O$
NaBr (Br^-): -1
$NaBrO_3$ (Br^{5+}): +5
16. The element that always shows an oxidation state of –1 in its compounds is:
A) Oxygen B) Chlorine C) Fluorine D) Iodine
Answer:C
Solution:Fluorine is the most electronegative element and always -1.
17. In the conversion of MnO_4^- to Mn^{2+}, the oxidation number of manganese:
A) Increases B) Decreases C) Remains the same D) Becomes zero
Answer:B
Solution:MnO_4^- =Mn+4(-2)=-1
Mn= -1+8=7
Mn^{2+}:Mn=+2
Change: +7 $\rightarrow$ +2 (reduction, oxidation number decreases).
18. The oxidation number of nitrogen in NO_2^- (nitrite ion) is:
A) +3 B) +2 C) +4 D) +1
Answer:A
Solution:NO_2^- =N+2(-2)= -1
N=4-1=3
19. The oxidation number of sulphur in $Na_2S_2O_3$ (sodium thiosulphate) is:
A) +2 B) +6 C) +3 D) a fractional value
Answer:A
Solution:$Na_2S_2O_3$ =2(1)+2S+3(-2)=0
2S=6-2 $\rightarrow$ 2S=4 $\rightarrow$ S=4/2=2
20. The element that shows only one oxidation state in its compounds is:
A) Calcium B) Iron C) Chlorine D) Sulphur
Answer:A

Solution:Calcium always shows +2 (no variable states).
Others:Iron: +2, +3
Chlorine: -1 to +7

Sulfur: -2 to +6

JEE ADVANCED LEVEL QUESTIONS

Multicorrect Answer Type

21. $3Cu+8HNO_3 \rightarrow 3Cu(NO_3)_2+2NO+4H_2O$ the correct statement for the reaction is

A) *Cu* is oxidized
B) HNO_3 is reduced
C) *Cu* is reduced
D) *Cu* acts as reducing agent

Answer:A,B,D

Solution:Oxidation:
Cu (0) $\rightarrow Cu^{2+}$ (+2): Loses 2 electrons per Cu atom (Oxidation).
Reduction:
HNO_3 (N^{5+}) $\rightarrow$ NO (N^{2+}): Gains 3 electrons per N atom (Reduction).
Roles:
Cu is oxidized and acts as the reducing agent.
HNO_3 is reduced and acts as the oxidizing agent.
Incorrect Option:
C) Cu is reduced: False (Cu is oxidized).

22. Which of the following have been arranged in order of decreasing oxidation number of Sulphur?

A) $H_2SO_4 > NaSO_2 > Na_2SO_3$
B) $SO_2 > SO > H_2SO_4$
C) $H_2SO_4 > H_2SO_3 > SCl_2 > H_2S$
D) $H_2SO_4 > SO_2 > H_2S_2O_6$

Answer:C

Solution:Compound Oxidation State of S
$H_2S_2O_7$ (Disulfuric acid) $\rightarrow$ +6 (each S)
$Na_2S_2O_6$ (Sodium dithionate) $\rightarrow$ +5 (each S)
SO^{2+} (Sulfuryl ion) $\rightarrow$ +6
SO_4^{2-} (Sulfate) $\rightarrow$ +6
SO_3^{2-} (Sulfite) $\rightarrow$ +4
HSO_4^- (Bisulfate) $\rightarrow$ +6
H_2SO_5 (Peroxymonosulfuric acid) $\rightarrow$ +6 (with peroxide)
H_2SO_3 (Sulfurous acid) $\rightarrow$ +4
SCl_2 (Sulfur dichloride) $\rightarrow$ +2
H_2S (Hydrogen sulfide) $\rightarrow$ -2
$H_2S_2O_6$ (Dithionic acid) $\rightarrow$ +5 (each S)
Correct Option: C) $H_2SO_4 > H_2SO_3 > SCl_2 > H_2S$
Order: +6 > +4 > +2 > -2

Statement Type/Assertion and Reason Type:

23. Assertion (A): The reaction between zinc and copper(II) sulphate is a redox reaction.
Reason (R): Zinc loses electrons and gets oxidized while copper ions gain electrons and get reduced.

Answer:A

Solution:Verify Assertion (A):
The reaction is:$Zn+CuSO \rightarrow ZnSO_4+Cu$
Zn (0) $\rightarrow$ Zn^{2+} (+2): Oxidation (loss of 2 electrons).
Cu^{2+} (+2) $\rightarrow$ Cu (0): Reduction (gain of 2 electrons).
Conclusion: It is a redox reaction (both oxidation and reduction occur).
Assertion (A) is TRUE.
Verify Reason (R):
Zinc is oxidized (loses electrons).Copper ions (Cu^{2+}) are reduced (gain electrons).
Reason (R) correctly explains (A).

Comprehension Type:

24. The atom undergoing oxidation is:
A) Mg B) Ag C) N D) NO_3^-

Answer:A

Solution:In the reaction: $Mg + 2AgNO_3 \rightarrow Mg(NO_3)_2 + 2Ag$
Oxidation:
Mg (0)$\rightarrow$ Mg^{2+} (+2): Loses 2 electrons (Oxidation).
Reduction:
Ag^+ (+1) $\rightarrow$Ag (0): Gains 1 electron per Ag? ion (Reduction).

25. Which of the following undergoes reduction?
A) Mg B) Ag^+ C) O_2 D) $Mg(NO_3)_2$

Answer:B

Soluton:Reduction involves gaining electrons.
In the reaction:
Ag^+ ions (from $AgNO_3$) gain electrons to form Ag (silver metal).

Integer Type

26. The oxidation number of phosphorus in elemental white phosphorus (P_4) is _____

Answer:0

Solution:Elemental forms of any atom (e.g., P_4, O_2, S_8) always have an oxidation state of 0 because they are in their pure, uncombined state.

27. What is the oxidation number of sulfur in the ion SO_3^{2-}?

Answer:4
Solution:SO_3^{2-}
S+3(-2)= -2
S=-2+6=4

Matrix Matching Type
28.**Answer:a-2,b-1,c-4,d-3**
Solution:

	Column - I	**Column - I**
a)	$CrCl_3$	2) Cr is oxidised

Oxidation state change: Cr (0) $\rightarrow$ Cr^{3+} (+3).
Conclusion: Cr loses electrons $\rightarrow$ Oxidised.

b)	MX_2	1) X = M^3

Initial oxidation state of M = -2.
After losing 5 electrons: X = M^3

c)	FeF_2	4) F is reduced

Fluorine (F2) gains electrons $\rightarrow$ Reduction.

d)	Pb_3O_4	3) Good oxidising agent

29.**Answer:a-3,5,b-4,c-2,d-1,5**
Solution:

Column - I	**Column - II**
a) Oxidation	3) Zn $\rightarrow$ Zn^{2+} + $2e^-$ (Zinc loses 2 electrons)
	5) $Mg \rightarrow Mg^{2+} + 2e$ (Magnesium loses 2 electrons).
b) Reduction	4) $Cl + e \rightarrow Cl^-$ (Chlorine gains 1 electron)
c) Oxidant	2) F (Fluorine is the strongest oxidizing agent, readily gains electrons).
d) Reductant	1) Ca (Calcium readily loses 2 electrons).
	5) $Mg \rightarrow Mg^{2+} + 2e$ (Magnesium loses 2 electrons)

KEY

					TEACHING TASK				
					JEE MAIN LEVEL QUESTIONS				
1	2	3	4	5	6	7	8	9	10
A	B	A	C	A	D	D	B	B	B
11	12	13	14	15					
B	A	C	B	C					
					JEE ADVANCED LEVEL QUESTIONS				
16	17	18	19	20	21	22	23	24	25
B,C,D	D	A	A	B	A	A	1	5	A-3,B-5,C-
					LEARNERS TASK				D-1
1	2	3	4	5	6	7	8	9	10
B	A	B	B	C	A	C	A	D	B
					JEE MAIN LEVEL QUESTIONS				
11	12	13	14	15	16	17	18	19	20
B	B	C	A	A	C	B	A	A	A
					JEE ADVANCED LEVEL QUESTIONS				
21	22	23	24	25	26	27	28		
A,B,D	C	A	A	B	0	4	a-2,b-1,c-4,d-3		
29									
a-3,5,b-4,c-2,d-1,5									