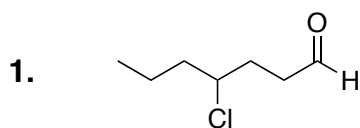
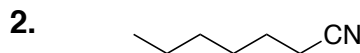


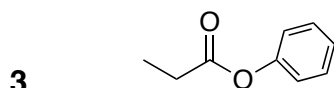
Questions 1-8: Which is the correct name/ structure for the following structure / name?



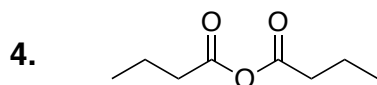
- a. 4-chloroheptanal
- b. 4-chlorohexanal
- c. 4-chloro-2-heptanal
- d. 4-chloropentanal



- a. heptanenitrile
- b. hexanenitrile
- c. octanenitrile
- d. pentanenitrile

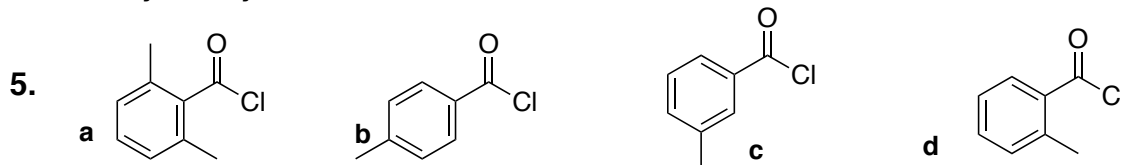


- a. Phenyl propanoate
- b. Benzyl propanoate
- c. Phenyl butanoate
- d. Benzyl butanoate

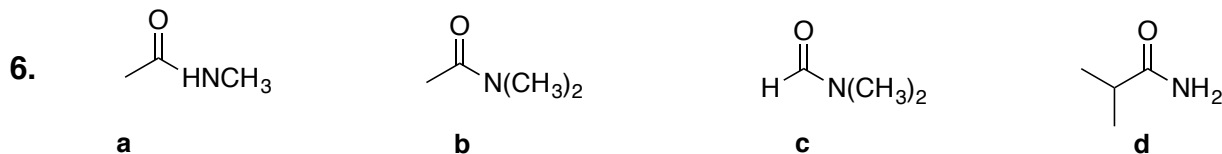


- a. butanoic anhydride
- b. pentanoic anhydride
- c. butanoic pentanoic anhydride
- d. propanoic anhydride

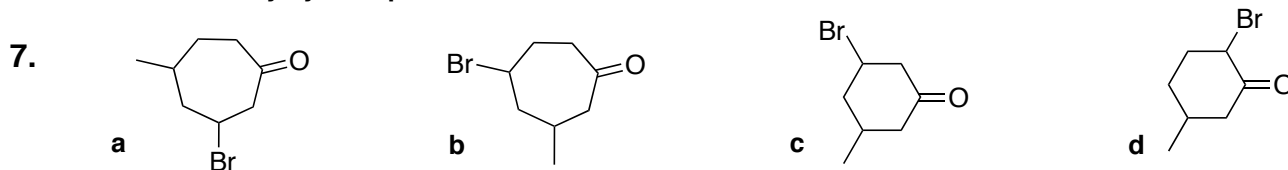
2-methylbenzoyl chloride



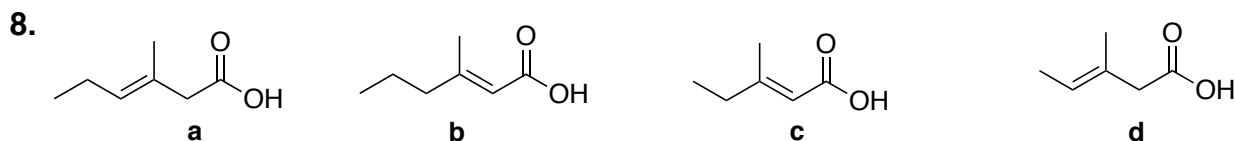
N,N-dimethylacetamide



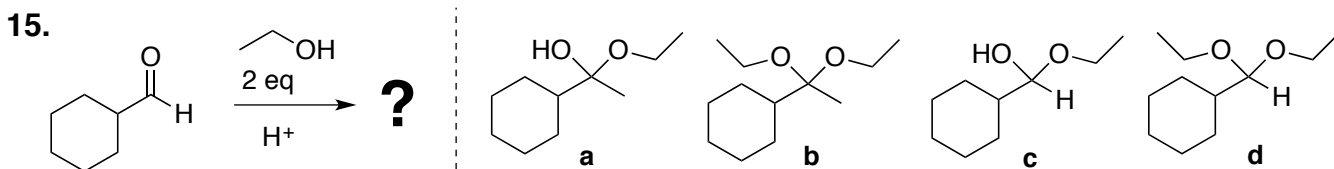
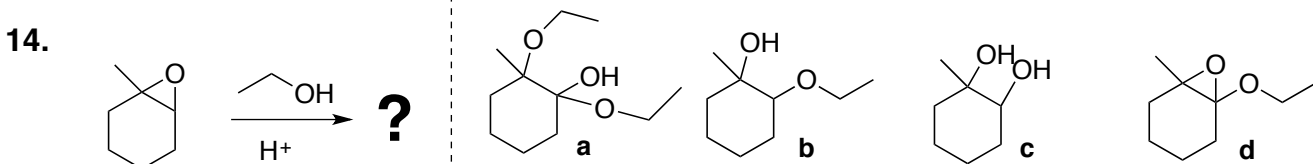
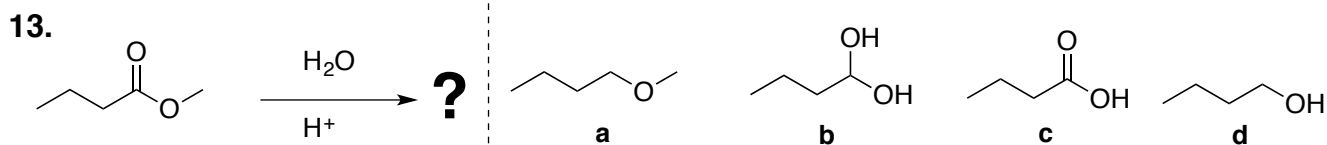
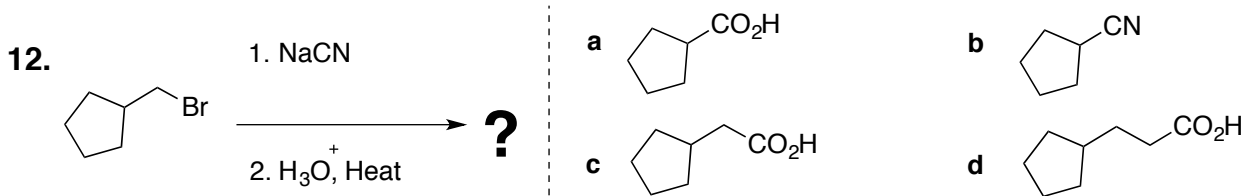
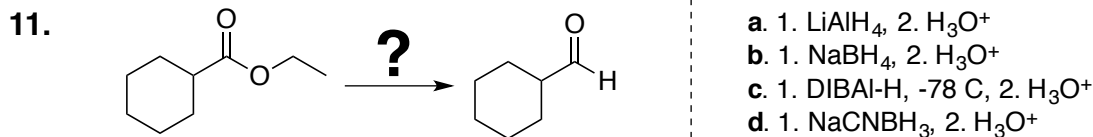
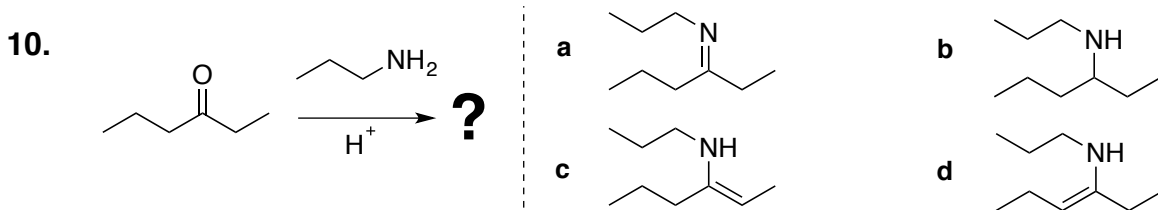
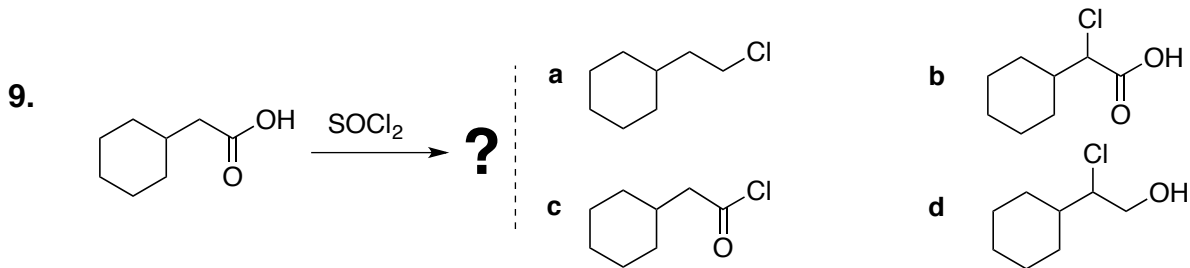
5-bromo-3-methylcycloheptanone

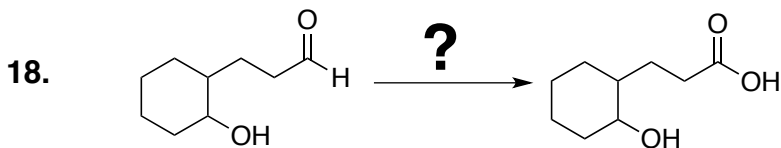
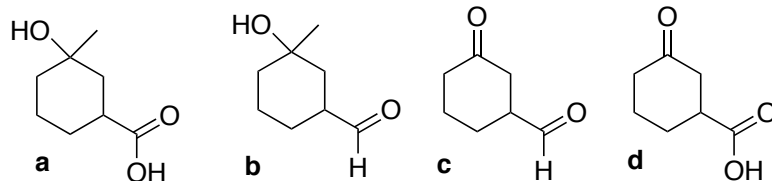
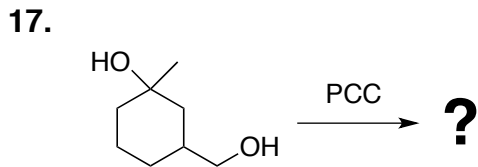
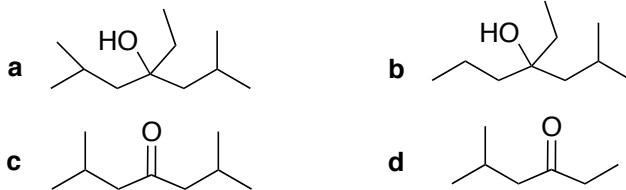
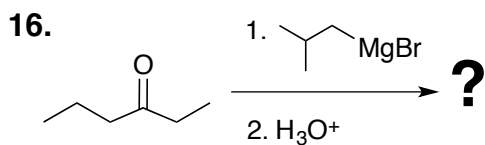


3-methyl-2-pentenoic acid

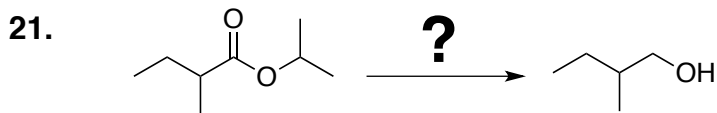
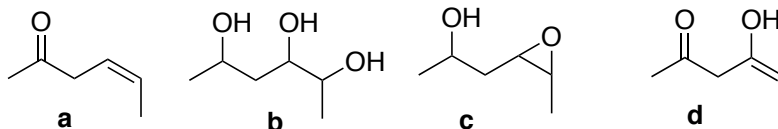
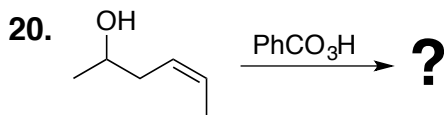
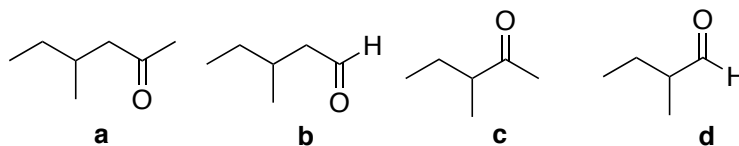
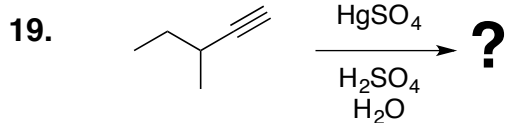


Questions 9-33: What is the correct product/ conditions for the following reactions?

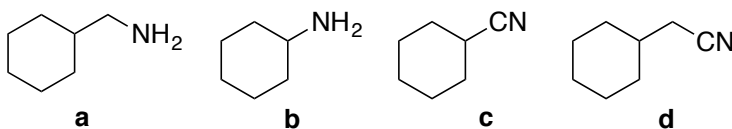
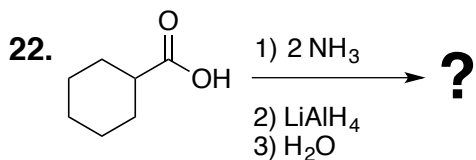


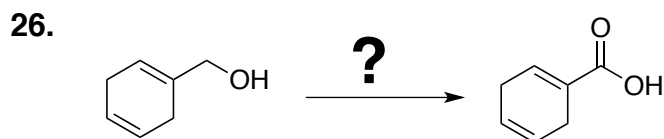
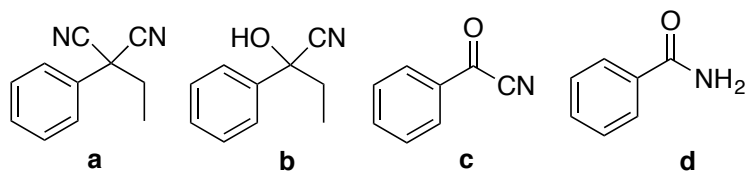
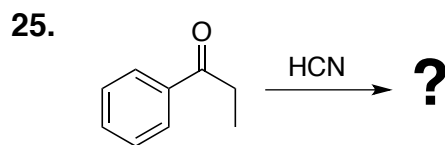
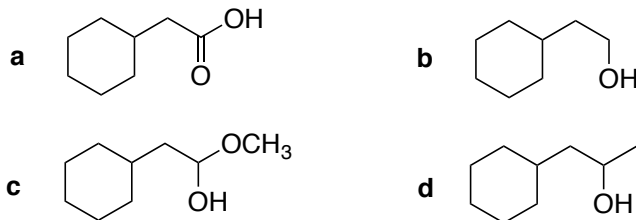
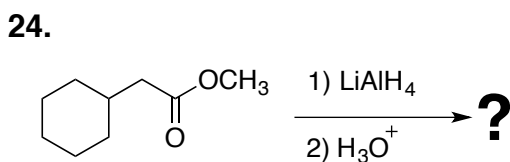
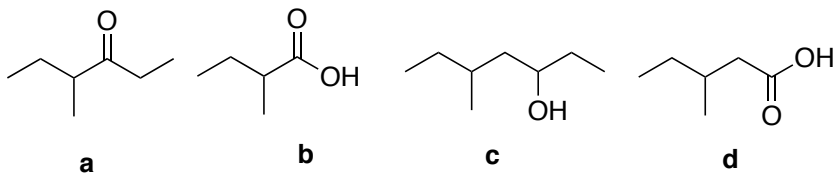
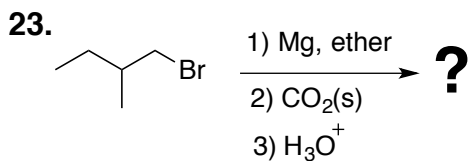


- a. $\text{CrO}_3, \text{H}^+, \text{H}_2\text{O}$ (Jones)
b. PCC
c. $\text{Ag}_2\text{O}, \text{NH}_3, \text{H}_2\text{O}$ (Tollens)
d. DIBAL-H



- a. $\text{CrO}_3, \text{H}^+, \text{H}_2\text{O}$
b. PCC
c. 1. LiAlH_4 , 2. H_3O^+
d. 1. DIBAL-H, -78°C , 2. H_3O^+





- a. PCC
- b. CrO₃, H⁺, H₂O (Jones)
- c. 1. LiAlH₄, 2. H₃O⁺
- d. 1. DIBAL-H, -78 C, 2. H₃O⁺

Use Figure 1 to answer questions 27 thru 32

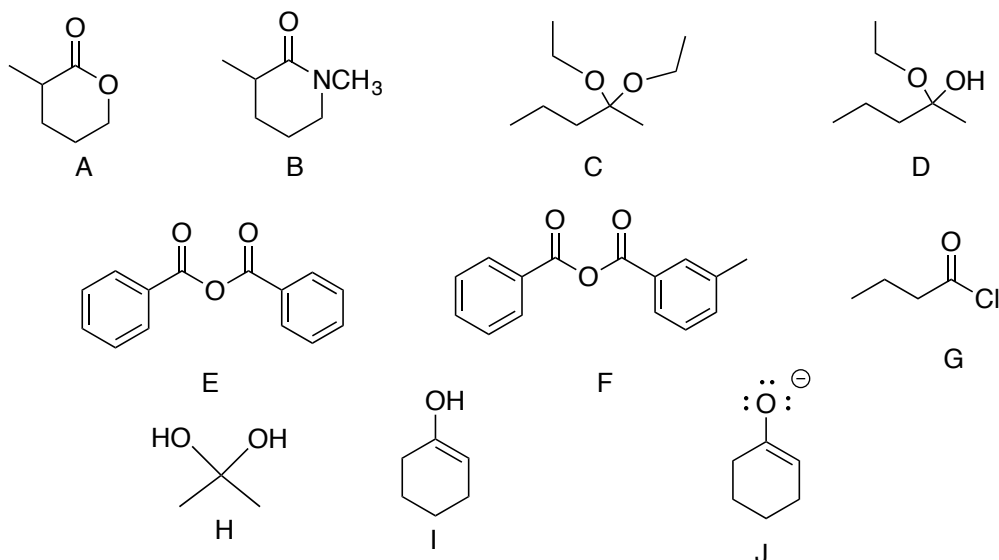


Figure 1

27. Which of the structures in **Figure 1** represents a hydrate of a ketone?

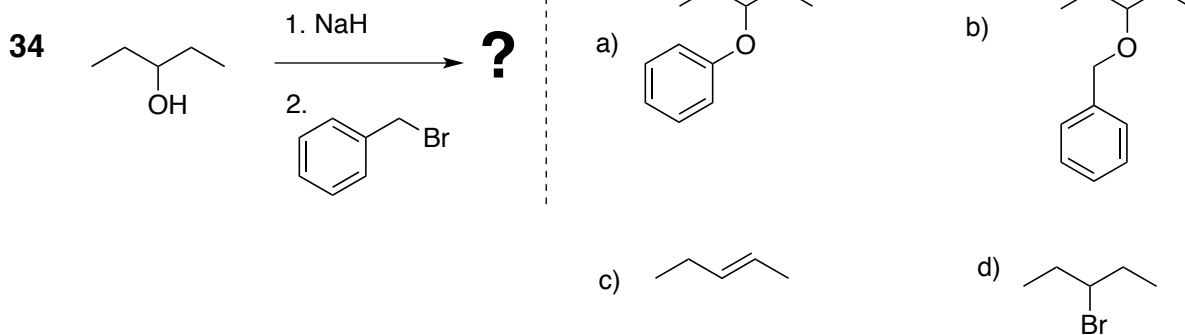
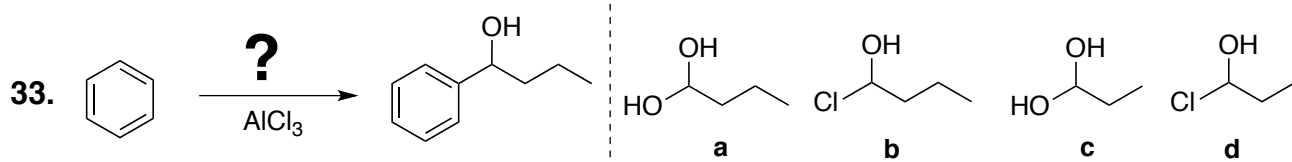
28. Which of the structures in **Figure 1** represents a **Lactone**?

29. Which of the structures in **Figure 1** represents a **Lactam**?

30. Which of the structures in **Figure 1** represents an **enol**?

31. Which of the structures in **Figure 1** represents an **acetal**?

32. Which of the structures in **Figure 1** represents a hydrate of a **hemiacetal**?



PERIODIC TABLE OF THE ELEMENTS

<http://www.kf-spl.it/~periodni/en/>

GROUP

1	1A	1	1.0079	H	HYDROGEN	1	1	18	VIIIA	2	4.0026	He	HELIUM
2	2A	2	6.941	Li	LITHIUM	3	6.941	10	VIIIA	10	20.180	Ne	NEON
3	3A	3	24.305	B	BORON	5	10.811	14	VIA	14	28.086	C	CARBON
3	4A	4	9.0122	Be	BERYLLIUM	13	26.982	15	VIA	15	30.974	N	NITROGEN
3	5A	5	24.305	Mg	MAGNESIUM	13	26.982	16	VIA	16	32.065	O	OXYGEN
3	6A	6	40.078	Ca	CALCIUM	19	39.098	20	VIA	20	78.96	S	SULPHUR
4	7A	7	50.942	K	POTASSIUM	25	54.938	26	VIIIB	26	63.546	Fe	IRON
4	8A	8	87.62	Sc	SCANDIUM	24	51.996	25	VIIIB	25	63.546	Cu	COPPER
5	9A	9	87.62	Ti	TITANIUM	41	92.906	42	VIIIB	42	106.42	Ni	NICKEL
5	10A	10	137.33	Zr	ZIRCONIUM	40	91.224	41	VIIIB	41	106.42	Cd	CADMIUM
5	11A	11	137.33	Sr	STRONTIUM	38	87.62	39	VIIIB	39	87.62	Zn	ZINC
5	12A	12	137.33	Rb	RUBIDIUM	37	85.468	38	VIIIB	38	85.468	Ga	GALLIUM
6	13A	13	137.33	Cs	CAESIUM	55	132.91	56	VIIIB	56	132.91	Ge	GERMANIUM
6	14A	14	137.33	Ba	BARIUM	55	132.91	56	VIIIB	56	132.91	Sn	TIN
7	15A	15	137.33	Fr	FRANCIUM	87	(223)	88	VIIIB	88	(223)	Pb	LEAD
7	16A	16	137.33	Ra	RADIUM	88	(226)	89	VIIIB	89	(226)	Bi	BISMUTH
7	17A	17	137.33	Ac-Lr	ACTINIDE	89-103	(227)	90	VIIIB	90	(227)	Po	POLONIUM
7	18A	18	137.33	La-Lu	LANTHANIDE	57-71	(227)	72	VIIIB	72	(227)	At	ASTATINE
7	19A	19	137.33	Rf	RUTHERFORDIUM	104	(261)	105	VIIIB	105	(261)	Rn	RADON
7	20A	20	137.33	Db	DBERIUM	105	(262)	106	VIIIB	106	(262)	Xe	XENON
7	21A	21	137.33	Sg	SEABORGIUM	106	(266)	107	VIIIB	107	(266)	I	IODINE
7	22A	22	137.33	Bh	BOHRIUM	107	(264)	108	VIIIB	108	(264)	Te	TELLURIUM
7	23A	23	137.33	Hs	HASSIUM	108	(268)	109	VIIIB	109	(268)	At	ASTATINE
7	24A	24	137.33	Mt	MEITNERIUM	109	(277)	110	VIIIB	110	(277)	Po	POLONIUM
7	25A	25	137.33	Uub	UNUNBIUM	110	(281)	111	VIIIB	111	(281)	At	ASTATINE
7	26A	26	137.33	Uuq	UNUNQUADIUM	111	(285)	112	VIIIB	112	(285)	Rn	RADON
7	27A	27	137.33	Uuq	UNUNQUADIUM	112	(289)	114	VIIIB	114	(289)	Xe	XENON
7	28A	28	137.33	Uuq	UNUNQUADIUM	114	(289)	114	VIIIB	114	(289)	Xe	XENON

Legend:

- Metal
- Semimetal
- Nonmetal
- L Alkali metal
- 2 Alkaline earth metal
- 16 Chalcogens element
- 17 Halogens element
- 18 Noble gas
- 1 Transition metals
- 1 Lanthanide
- 1 Actinide

STANDARD STATE (25 °C; 101 kPa)

- Ne - gas
- Ga - liquid
- Fe - solid
- Tc - synthetic

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(1) Pure Appl. Chem., 73, No. 4, 667-683 (2001)
Relative atomic mass is shown with five significant figures. For elements having no stable nuclides, the value enclosed in brackets indicates the mass number of the longest-lived isotope of the element.
However three such elements (Th, Pa, and U) do have a characteristic terrestrial isotopic composition, and for these an atomic weight is tabulated.

Editor: Aditya Vardhan (adv@netlinx.com)