

# Answer Key for Exam A

## Section 1. (5 points) Fill in the blanks (1pt per question)

1. The English word represented by the IPA transcription [θænk] is thank
2. The English word represented by the IPA transcription [neɪʃn] is nation
3. The IPA transcription of the word *rich* is [ɹɪtʃ]
4. The IPA transcription of the word *reach* is [ɹi:tʃ]
5. The IPA transcription of the word *but* is [bʌt]

## Section 2. Short Answer Questions

6. (5pts) What are the 5 language families spoken in the Indian subcontinent? Briefly mention their geographical spread also.
  - (a) Indo-Aryan: North India, Pakistan and Bangladesh
  - (b) Dravidian: South India and Brahui in Pakistan
  - (c) Austro-Asiatic: Jharkhand
  - (d) Tibeto-Burman: North-eastern states
  - (e) Andamanese: Andaman and Nicobar islands
7. (10 points) Consider the grammar given below. Construct syntactic representations (trees) for each of meaning of the sentence: *The aged bottle flies fast*

$S \rightarrow NP (Aux) (Neg) \mathbf{VP}$   
 $S \rightarrow AdjP \mathbf{VP}$   
 $NP \rightarrow (Det) * (Adj) * (\mathbf{N}) + (PP)$   
 $VP \rightarrow \mathbf{V} (NP) (Adv) (PP) * (Adv)$   
 $PP \rightarrow \mathbf{P} NP$   
 $X \rightarrow X \mathbf{Conj} X$   
 $AdjP \rightarrow Det \mathbf{Adj}$

- X denotes any lexical/phrasal category
- (X) denotes that X is optional
- (X)\* denotes 0 or more instances of X
- (X)+ denotes 1 or more instances of X
- Category in bold indicates the head of the rule expansion

Atleast 3 trees for the sentence *The aged bottle flies fast*. corresponding to the following bracketed structures and meanings will get full credit (else partial credit):

- (a) [*The aged bottle*]<sub>NP</sub> *flies fast*: The old bottle travels fast through the air
- (b) [*The aged*]<sub>NP</sub> *bottle flies fast*: Old people put flies in a bottle quickly
- (c) [*The aged bottle flies*]<sub>NP</sub> *fast*: The old bottle flies are fasting (*i.e.*, eating no food)

8. (10 pts) Analyze the morphological structure of the English word *unbuttonable*. Explain how the meaning of this word is influenced by its structure.

There are 2 structures possible for the word *unbuttonable* (Structure=1.5pts + Meaning = 1.5pts; So total of 6pts here):

- (a) [*un* + [*button\_Verb* + *able*]*\_Adjective*]*\_Adjective* meaning “not able to be buttoned”
- (b) [[*un* + *button\_Verb*]*\_Verb*]*\_Adjective* meaning “able to be buttoned”

4pts for the following explanation:

2 structures arise because the prefix *un-* can combine with an adjective, as in the case of *uncouth*, *untidy* etc, or it can combine with a verb, as in *undo*, *unstaple*, *unearth*, and *unloosen*. In the first structure the verb *button* combines with the suffix *-able* to form an adjective *buttonable*. Then the prefix *un-*, meaning “not,” combines with the derived adjective to form a new adjective *unbuttonable*. In the second case, the prefix *un-* combines with the verb *button* to form a derived verb *unbutton*. Then the derived verb combines with the suffix *-able* to form *unbuttonable*.

9. (10 points) Draw unlabeled dependency trees for the sentence *John ate a delicious vanilla flavour cookie* corresponding to each of the meanings below:

- (a) John ate a cookie with flavour of delicious vanilla
- (b) John ate a delicious cookie with vanilla flavour
- (c) John ate a delicious and flavoured cookie made of vanilla
- (d) John ate a cookie with a delicious flavour of vanilla

**Instruction:** *Dependency links should start from the head word and going towards the dependent (i.e., Head --> Dependent)*

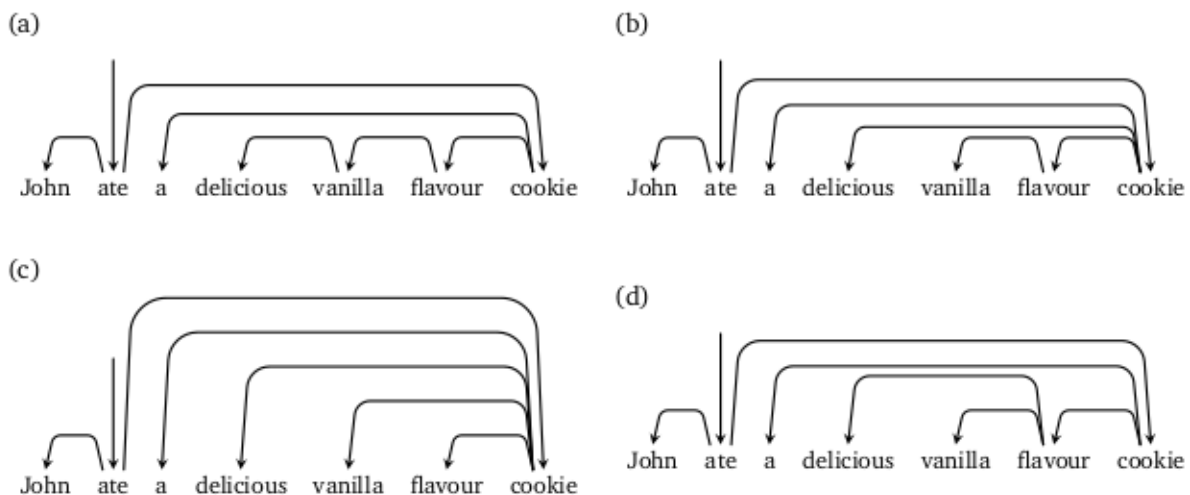


Figure 2: Dependency trees

Dependency trees shown in Figure 2 constitute the answers to this question.

10. (10 points) Examine the Canadian French data in Figure 3 and answer the following questions:
- (a) (5 points) State the distribution of the sounds [t] and [tʰ] (a voiceless alveolar affricate).
  - (b) (5 points) State with reasons whether the above sounds are the allophones of the same phoneme or whether they are allophones of distinct phonemes.

<b>a.</b> [tu]	'all'	<b>g.</b> [telegram]	'telegram'
<b>b.</b> [abut <sup>s</sup> i]	'ended'	<b>h.</b> [trɛ]	'very'
<b>c.</b> [tɛl]	'such'	<b>i.</b> [kylt <sup>s</sup> yr]	'culture'
<b>d.</b> [tɛ̃b]	'stamp'	<b>j.</b> [minyt]	'minute'
<b>e.</b> [t <sup>s</sup> imid]	'timid'	<b>k.</b> [t <sup>s</sup> y]	'you'
<b>f.</b> [t <sup>s</sup> it]	'title'	<b>l.</b> [t <sup>s</sup> yb]	'tube'

Figure 3: Canadian-French data

[y] and [Y] are high, front, unrounded vowels; tense and lax respectively.

- (a) The sounds [t] and [t<sup>s</sup>] are allophones of the same phoneme as they are in complementary distribution.
- (b) The sound [t<sub>s</sub>] appears only before high front vowels, while [t] occurs elsewhere.