

Chapter 9

MORPHOLOGY

Morphology is the science and study of the smallest grammatical units of language, and of their formation into words, including inflection, derivation and composition. According to Dorfman, morphology is the study of the ways and methods of grouping sounds into sound-complexes or words, of definite, distinct, conventional meaning. Bloomfield calls it the study of the constructions in which bound forms appear among the constituents. Broadly speaking, morphology is the study of the patterns of word-forms. It studies how the words are formed, where they originate from, what their grammatical forms are, what the functions of prefixes and suffixes in the formation of words are, on what basis the parts of speech of a particular language are formed, how the systems of gender, number, plural, etc. function, how and why the word-forms change.

Morphology is "a level of structure between the phonological and the syntactic." It is complementary to syntax. **Morphology** is the grammar of words; **syntax** the grammar of sentences. One accounts for the internal structure, or 'form' of words (typically as sequences of morphemes), the other describes how these words are put

together in sentences. A discussion of how plurals are formed, for example, would belong to morphology, while a discussion of prepositional phrases would belong to syntax. The way morphemes combine to form words is known as the **morphology** of a language. Morphology, there, refers to the form of words themselves in a language system, whereas **syntax** refers to the form of the arrangement of words in phrases and sentences. Agreement for example, is a morphological feature and word-order is a syntactic feature of a language system.

Morphology is not only the synchronic study of word forms but is also the study of the history and development of word-forms. So it is both a synchronic (in a **given time**) and a diachronic (across time) study of the word-forms. When it is only synchronic, it is called **morphemics**.

The **morphological analysis** is the observation and description of the grammatical elements in a language by studying their form and function, their phonological variants, and their distribution and mutual relationships within larger stretches of speech. It may be either synchronic or diachronic, or may be both synchronic and diachronic.

MO.'PHEME

Minimal units of grammatical structure, such as the four components of **un faith fulness** are called morphemes. **Telephones** has three morphemes (tele), phone, and (-s,) while **telephone** has two and **phone** just one. Morphemes are customarily described as minimal units of grammatical analysis the-units of 'lowest' rank of which words, the units of next 'highest' rank are composed. So morphemes are those distinct, minimal syntactical units which form words. They can also be defined as the minimal units of meaning out of which meaningful words are composed in various ways.

A morpheme thus is a distinct linguistic form. It is a minimal unit of speech that is recurrent. It has a grammatical function. It is a **semantically different form**

other phonemically similar or identical linguistic forms, and is not divisible or analyzable into smaller forms. If we try to break or analyze a morpheme into its constituents, it loses its identity, and we end up with a sequence of meaningless noises, e.g., **nation** (na+tion, or nati+on). Analyzing the morphemes leads us straight into the realm of phonology.

Morphemes may or may not have meaning, may or may not have a phonological representation. (un-) has a negative meaning in **unfriendly unhealthy, unable, unemployed** and many other words, but is meaningless in **under**. (-er) has a constant meaning in **teacher, heater, reader, writer, speaker, painter, leader**, etc. But it would be difficult to pin down any constant meaning for **spect** in **respect, inspect, circumspect**, for **pre** in **pre in and spectacle or protest, professor, prospective, process, proceed**, etc. In plural words like **sheep, fish** we have two morphemes in each word; the first morpheme in each case has a phonological representation but the second one has no phonological representation and is called **zero morpheme**. Morphologically the plural noun **sheep** is [sheep]+(), that is to say that the word '**sheep**' is made up of two morphemes **sheep** plus a **plural morpheme** which is present in the meaning but is not physically present in spelling or pronunciation.

Morphemes sometimes vary in their phonological manifestations. **Pro**, for instance, is pronounced different in **profess** and the noun **progress**. The plural morpheme is pronounced (s) in words like **cats, maps and snacks**; [z] in **dogs, hands, and ideas**; (iz) in words like **churches, judges, classes**; but it has no phonetic form at all in the plural nouns such as **sheep, fish**, etc. Then there are completely idiosyncratic forms such as **oxen, children, brethren**. It is not always clear whether or not a given sound sequence, should be considered a morpheme. For instance, should **animal** be said to consist of two morphemes **anima** (a) and (b) l, or just one? consider **natural**: it has two morphemes (**nature**) and (-al). Shouldn't we then regard **woman** as a word having two morphemes (wo-) and (man)? A sound

sequence is a morpheme in some words; it is not in some others. **Un** clearly is a morpheme in **unnatural** and **unfaithful** but it is not a morpheme in **under** or **sun**.

A morpheme may be monosyllabic as (man) and (a/an/the) or polysyllabic as (happy) and (nature).

A morpheme has been called 'a grammatical moneme' by Martinet. Another synonym for the morpheme is 'glosseme'.

Morphemes are usually put into braces, i.e. curly brackets { } (the) (help) (-less) (boy) (-s.)

MORPHS

Any phonemic shape or representation of a phoneme is a morph (Hockett). Each morph, like each phone, or each person or each day, happens only once and then it is gone. To quote John Lyons, "When the word can be segmented in to part, these segments are referred to as morphs." Thus the word **shorter** is analyzable in two morphs, which can be written orthographically as **short** and **er**, and in a phonological transcription /t /and //. Each morph represents a particular morpheme, but each morpheme does not have a morph. For example, the plural noun **sheep** has one morph, but it has two morphemes [sheep] and [] **went** has one morph, but two morpheme [go] and [ed].

ALLOMORPHS

It frequently happens that a particular morpheme is not represented everywhere by the same morph, but by different morphs in different environments. The alternative phonological manifestation or representations of such a morpheme are called **allomorphs** or 'morpheme alternats' or 'morpheme variant'. An allomorph, therefore, is a non-distinctive variant of a morpheme. Or, it may be called a family or class of morphs which are phonemically and semantically identical, that is, an allomorph is "a family of morphs

which are alike in two ways: (i) in the allophones of which they are composed and, (ii) in the meaning which they have" (Nelson Francis).

The allomorphs are phonologically conditioned. Their forms are dependent on the adjacent phonemes. Or else, they are morphologically conditioned. That is, when morphemes are affected by their phonological environment 'sandhi', they become allomorphs. For example, /-z/, /-s/, /-iz/, and /-φ/ are the various allomorphs of the plural morpheme (-z) in English.

The study of different shapes of allomorphs is half-way between phonology and morphology and is sometimes referred to as **morphophonology** or **morphophonology**. In America where phonology, is considered as part of descriptive, synchronic linguistics has relied on phonemic analysis, the term morphophonemics is used for this aspect of grammar.

PHONOLOGICAL CONDITIONING

The English plural morpheme provides very good examples of both phonologically and morphologically conditioned allomorphs. /-s/, /-z/, and /-iz/ are all phonologically conditioned allomorphs of the English plural morpheme.

1. /-s/ appears with morphs ending in /p,t,k,f,θ/
2. /-z/ appears with morphs ending in /b,d,g,v,ð,m,n,ŋ,l,r,y,w/
3. /-iz/ appears with morphs ending in /z,ʃ,ʒ,t,ʃ,dʒ/.

These generalizations can be exemplified in the following manner:

form taking /s/	forms taking /z/	forms taking /iz/
cups/kʌps/	hubs/hʌbz/	classes/kla : siz/
hats/hæts/	hands/hændz/	mazes/meiziz/
thanks/θæŋks/	dogs/dɔgz/	dishes/diʃ.iz/
coughs/kɒfs/	gloves/glʌvz/	garages/gæra ʒiz/
hyacinths/haɪəsinθs/	rim/rimz/	churches/tʃʌtʃ iz/

If we study these data to find a principle governing this distribution we will discover that these generalizations can be restated in even more general and precise terms, as given below:

1. /-s/ appears after morphs ending in voiceless morphemes, except the sibilants and affricates.
2. /-z/ appears after morphs ending in voiced morphemes, except the sibilants and affricates.
3. /-iz/ appears after morphs ending in sibilants and affricates.

That is, the linguist has stated the conditions or explained what factors are responsible for the particular form of the plural. Since the factors in this case are the preceding sound segments, he classifies this as phonological conditioning.

Another example of this phonological conditioning is the past tense morpheme of English [-ed]. It is also regularly represented by three phonologically conditioned allomorphs /t/, /d/ and /-id/. The rule governing their distribution is as follows:-

1. /id/ occurs after morphs ending in alveolar stops /t/ and /d/ as in **wanted**/wɪntɪd/ and **wedded**/wedɪd/.
2. /d/ occurs after voiced phonemes except /d/ as in **loved** /lʌvd/ and **called** /kɔːld/.
3. /t/ occurs after voiceless phonemes except /t/ as in **helped** /helpt/.

MORPHOLOGICAL CONDITIONING

In pairs such as **man-men**, **child-children** and **deer-deer**, in which the second item can be said to contain the "plural" morpheme, we cannot state the variation, if any, between the two forms in terms of phonetic environments. Instead we must refer to each morpheme separately or, alternatively to their phonemic shapes, and specify the allomorph of the 'plural morpheme' separately for each. This kind of variation among allomorphs is called morphological conditioning. The morphologically conditioned allomorphs of a

morpheme are regarded as irregular in contrast with the phonetically conditioned allomorphs, which are regarded as regular. **Men, children and deer** are therefore irregular English plurals, just as are **alumni criteria, mice, women and oxen**. The "past tense" morpheme also has its irregular allomorphs, as in **drank, brought, swam, was, had, put, took, fled, built**, and so on, likewise, the "past participle" morpheme has irregular allomorphs, as in **drunk, brought, sum, been, broken, stood, put** and on.

Let us analyze some of the words stated above:

Oxen-oz+/-ðn/

Deer-+/-φ/

We noticed in the earlier section on "phonological conditioning" that the linguist was making some very useful generalization. But in cases of 'oxen' and 'deer' his prediction went wrong: we did not have "oxes" and "deer." On the other hand we found the sense of plural was retained in "oxen" and "deer". Though the sense is retained yet the form is puzzling. So he concludes that the morpheme **ox** itself is perhaps the condition factor and not the sound sequence of which it is composed for this new plural marker. So he calls this **morphological conditioning**.

ZERO SUFFIX

There are certain forms which have the same singular and plural forms such as **sheep, deer, cattle**. Such forms in the singular and the plural are not different. They are homophonous. However, the linguist, for the sake of uniformity assumes that the plural morpheme is present but its phonetic manifestation or representation is zero. It has no visible marker in the environment of **sheep, deer, or cattle**. He would, therefore, analyze these in the following manner:

sheep+/-φ/

deer+/-φ/

cattle+/-φ/

REPLACIVE

There is no obvious way to analyse forms like **geese, mice, lice** etc. Some linguists suggest that the plural vowel /i:/ in **geese**, /gi: s/ which replaces the /u:/ in **goose**, /gu : s/ should be regarded as a special type of morphemic element called a **replative**. And they would analyze the plural as:

/gu:s+/i:/(/u:/)

Here the formula /i:/(/u:/) means 'i:/ replaces /u:/. Such a morpheme is called "replative" because it involves the replacement of a vowel.

But this is somewhat a strained explanation. It may be stated simply that the form /gi:s/(geese) represents two morphemes

goose+plural

and so do **mice**, and **lice**.

Note that a similar explanation can be offered for forms such as **went, took** which represent

go+past tense

take+past tense

MORPHEMIC CUTTING

Different problems of morphemic division are presented by words such as **plate, late/ate**, etc. Should the linguist divide them as /pl/+eit/ and /eit/ on the basis of the morpheme [ate]? If he does so on a basis, he can go wrong, and may destroy the meaning. He is baffled where to place the right cutting.

Occasionally problems of still another kind can arise, as in **cranberry, blackberry, strawberry** etc. At first sight such words appear to consist of two morphemes : **cran-berry, rasp-berry, black-berry, straw-berry**. On second sight it is difficult to justify **cran** and **rasp-** as independent morphemes but it is possible to establish (**black**) (**straw**), and (**berry**) as independent morphemes in cases of **blackberry** and **strawberry**. **Cranberry** along with words such as

raspberry, represents the so-called 'cranberry morph' problem.

A similar problem is raised by the English **wh**- and **th**-words: **where-there, when-then, whither-thither**. Should these be analysed as two morphemes, **wh-ere, the-ere** and so on? Perhaps this would be a good solution if they were the only **wh**-words English possessed. The situation is complicated by the existence of **who, why** which cannot be divided, it may be more satisfactory to keep **where, when, whither** as single morphemes also.

There are numerous problems of other nature too. Hence morphemic cutting is not as simple as it seems to be. Many a linguist would not be happy with concepts like the replacive morpheme, the zero morpheme and the zero allomorph. There are some languages in which several meaning categories are represented by single stretch of speech. The correspondence then is one to many between form and meaning. This case is called syncreticism. Then there are homophonous forms. There is always a possibility of over or under analysis. Because of these pitfalls, linguists have begun to doubt whether they can describe the arrangement of morphemes of an unknown language, and whether it is correct to go on from the phonological level to the morphological level with the ultimate goal of describing the syntax and semantics of language. Chomsky, for example, abolished the morphological component in his revised model of transformational grammar in **Aspects of a Theory of Syntax** (1965) and merged morphology with phonology. Others would like to merge it with syntax; some others would ask for a new name such as "Wordology" or Lexicology to account for words as well as morphemes. Nevertheless, the area of morphology is one in which languages tend to display a considerable amount of irregularity.

CLASSIFICATION OF MORPHEMES

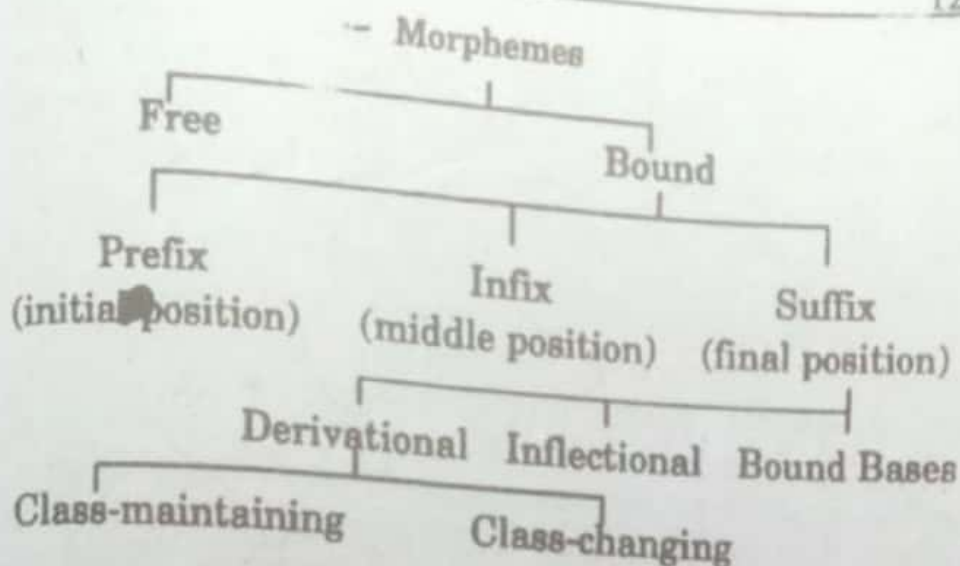
Lexical and Grammatical Morphemes

Ronald W. Langacker in his book *Language and Its Structure* has divided morphemes into two classes: lexical and grammatical. Lexical morphemes are forms like **boy, write, paper** and **pen**. Grammatical morphemes are forms like **some, with, a, an, the, to** form. Lexical morphemes are nouns, verbs, adjectives, and adverbs. They have more or less independent meaning, so that one or a series of lexical forms in isolation can be fairly meaningful. **Pen** suggest something quite definite to us, as do **boy, paper** and **write**. Lexical morphemes are very large in a language; the number may go up to ten million as in English. Grammatical morphemes are elements like prepositions, articles, conjunctions, form indicating number, gender or tense, and so on. Grammatical morphemes, by and large, do not change frequently: new members in their family in any language are added rather infrequently. But lexical morphemes go on changing frequently: new members are added to the lexicon quite often.

However, the distinction between lexical and grammatical morphemes is artificial and inadequate. 'Hood' is lexical morpheme is **she wears a hood**, but is not in **boyhood**. Prepositions are classed as grammatical morphemes, yet they are not all empty of semantic content. Even small grammatical morphemes such as the (-ly) in **rapidly** the [un-] in **unemployment** and the [er] in **teacher** have definite semantic content. Hence the necessity of a more rationalistic division of morphemes.

Free and Bound Morphemes

A more acceptable and more satisfactory classification than the one mentioned above classifies morphemes into free and bound forms. The whole classification can be represented in the following manner:-



These will be defined and illustrated in the following discussion. Morpheme, as defined earlier, are the minimum grammatical forms of a language. Some of them can occur alone, others cannot. Forms which do not occur alone are **bound morphemes**, and those which occur alone are **free morphemes**. **Rat, cat, go, black, the, yet, but, and** are free morphemes. Affixes to the words such as **-ness, -less, pre, up-, de-, con-, -er, meant** are all bound morphemes.

(a) Roots and Affixes- The root morpheme is that part of the word which is left when all the affixes have been removed. Root morphemes may be bound or free, and are potentially unlimited in a language, because languages go on creating new words or borrowing 'loan-words' from other languages. In a word like **unfaithful**, **faith** is the-root, the-**un** and the-**ful** are affixes; the **un-** is a prefix, whereas the-**ful** is a suffix.

All affixes are bound morphemes, for they cannot occur alone. A word which consists of only free root morpheme is called **monomorphemic**, e.g. **cat, rat**. The words containing more than one root are called **polymorphemic** e.g., **air-craft**; they can co-occur with or without affixes; they are often called **compound words**.

Root and affixes may be of any structure and length, though affixes generally tend to be shorter than roots. The criterion of determining the root is its indivisibility into constituent morphemes by matching its parts with the parts of other words in the language.

The affixes is the recurrent formative morpheme of words other than roots. Affixes are of three types—**prefix**, **infix** and **suffix**. In the English words such as **receive**, **remove**, **deceive**, **perform**, **unfaithful**, **unemployment**, **re-**, **de-**, **per-**, **un-**, are all prefixes. The prefixes are affixed before the roots and cannot occur independently; they are bound morphemes. The plural formative **-s**, **-en**; the verb paradigm affixes **-ing**, **-d**, **-ed**, etc. the comparative and superlative ending of the adjectives (**-er** and **-est**) and so many other final position formatives such as **-ness**, **-less**, **-ment** are called suffixes. The suffixes are affixed after the roots or after the root-suffix. Infixes are less commonly found in English apart from one mode of analysis of plurals like **geese**, **men**. Infixes are found in Cambodian, in Sudanese and in Sanskrit too.

(b) Inflection and Derivation: Both inflectional and derivational morphemes are suffixes; they are bound morphemes following a root. Inflection and derivation are, therefore, the sub-categories of suffixes. But they differ from each other. If one kind of suffix is affixed to a root we cannot affix any other. Suffix e.g., **inagreed** and **agrees**, **-d** and **-s** are suffixes and do not therefore, allow any further affixation of a suffix. Such affixes which do not allow further affixation called inflections or inflectional morphemes. The suffixes which may be followed by other suffixes are called **derivational** suffixes. For Example, **-ment**, **-ble** are derivational suffixes in **agreement** and **agreeable**, because both can be followed by other suffixes and can, for instance, become **agreements** and **agreeableness** after the addition of the suffix **-s** and **-ness** to **agree+ment** and **agree+able** respectively.

Inflectional suffixes have very wide distribution; that is, the words which they mark have a great many members. Inflectional suffixes are always final in the morpheme groups to which they belong. They are of wide occurrence; they make large words. Their distribution is regular. Derivational suffixes, on the other hand, may be final in the group to which they belong, or they may be followed by other derivational suffixes or by inflectional

suffixes. They are of relatively limited occurrence, and their distribution tends to be arbitrary. (Prefixes are always derivationals).

Inflectional suffixes are 'terminal', and their termination never changes the class (part of speech) of the root, for example, in **sweeter** and **sweetest**, the termination of -er-by-est does not change the part of speech; both the forms remain adjectives; come in a verb in **They come late**, and if we add an inflectional suffix....**ing** we get the form **coming** (as in **They are coming**) which is still a verb. An inflected form can be replaced by another inflected form only, e.g.

	[drink-s
He		steal-s
		play-s

but not

He steal/drink/play, etc.

An inflectional suffix occurs at the end position of a form; no further affixation in a form is possible after an inflection. We can say

develop+s

root(-)inflectional suffix

develop+ment+s

root deri-inflectional

 vational suffix.

 suffix

but not

develop

root

s

inflectional

suffix

ment

derivational

suffix

So an inflectional suffix is essentially terminal, whereas a derivational suffix is not essentially terminal. Derivational suffixes can occur medially and/or finally, but inflectional suffixes occur only finally.

(c) **Class-maintaining and Class-changing derivational suffixes:** Derivational suffixes can be sub-classified into two types: (i) Class-maintaining Derivational suffix and (ii) Class-changing derivational suffix. The class-maintaining derivational suffixes are those which produce a derived form of the same class as the underlying form; they do not change the class of a part of speech. In **boyhood, childhood, kinship, principalship, -hood** and **-ship** are class-maintaining derivational suffixes. In these examples they produce nouns out of nouns after suffixation. The class-changing derivations are those that produce a derived form of another class. In **teacher, boyish, development, national, -er, -ish, -ment, -al** are class-changing derivational suffixes. In **teacher**, a verb **teach** has become a noun after suffixing the **-er**. In **boyish**, a noun **boy** has become an adjective after suffixing the **-ish**.

We can further review the example of morphemes in the following manner:-

Words	Free Morpheme (root)	Bound Morphemes			
		Suffix			
		Prefix	Derivational suffix		Inflectional Suffix
			Class maintaining	Class changing	
Pre-establishment	[establish]	[pre-]		-ment	
Establishmentarianism	[establish]			[ment -arian -ism]	
Predominalizations	[inominal]	[pre-]			{-s}
Principalships	[principal]		{-ship}	{-iz} {-ation}	{-s}

(d) **Bound Bases:** Bound bases are those morphemes which serve as roots for derivational forms but which never appear as free forms. In words such as **conclude, preclude, include, exclude**, the **clude** is a

bound base; and so is the -ceive in receive, perceive, deceive.

Compounds

A compound is lexical unit in which two or more lexical morphemes (free roots) are juxtaposed, e.g. aircraft, textbook, white-cap, slow-down, bed-side, fingerprint.

Idioms

An idiom is a phrase the meaning of which cannot be predicted from the individual meanings of the morphemes it comprises. Idioms are complex lexical items; it is difficult to translate them from one language into another; they have culturally determined meanings. Most idioms are 'frozen metaphors', their meanings must be learnt as a whole, e.g. give way, in order to.

PHONOLOGICAL SEMANTIC AND SYNTACTIC CONSIDERATIONS

In the determinations and identification of morphemes all these considerations help a great deal. When a person learns a morpheme he has to tie together three kinds of information: phonological, semantic and syntactic. Morphs like **meet** and **meat** will have the same phonological representation/mi: t/, they have to be distinguished on the basis of meaning and usage. Some morphemes are semantically empty, 'to', for example, in **I want to sleep**, has no obvious meaning. A morpheme is not fully defined by its semantic and phonological properties alone. It also has syntactic properties, some syntactic representation that determines how it functions with respect to the grammatical processes of the language. **Rat**, for example, can function only as a noun, and never say, as an adjective or as a verb. Thus the sentences **that fat rat jumped upon the table** is a grammatical construction but **that the rat fat jumped upon the table** is not a grammatical sentence. Therefore, morphemes are "bundles of semantic, phonological and syntactic properties."

The analysis and classification of the different phonological shapes in which morphemes appear, or by which they are represented, both in individual languages and in languages in general, is often called morphophonemics or morphophonology. So called phonemics is a kind of code to represent morphemes in phonemic shapes. The morphophonemic of a language is never so simple. There are always many instances of two or more morphemes represented by the same phonemic shape as illustrated by the example of *meet* and *meat*, and cases in which a single morpheme is represented now by one phonemic shape, now by another. For example, the English plural morpheme is represented by various allophones such as /s/, /-z/, /-iz/. Therefore the morphophonemics of a language is never trivial; any systematic description of any language should cover it. According to Hocckett, the morphophonemic system is "the code which ties together the grammatical and the phonological system."

We will speak about morphophonemic changes and morphological processes in the chapter entitled "Language Change" in this book.

Note: Many would agree with the view: 'Morphology', syntax and toxicology interpenetrate because every synchronic fact is identical. No line of demarcation can be drawn in advance. Recently, Generative grammarians too have abolished the morphological component of the linguistic theory. But we in this have not followed any school of linguistics. Our purpose is to offer insights into its varied developments and trends, hence this discussion on 'Morphology' to facilitate study of language.

TYPICAL QUESTIONS

1. What is meant by morphology?
2. Distinguish between phonologically and morphologically conditioned allomorphs.

3. *What is a zero morph?*
 4. *What is the 'cranberry morph' problem?*
 5. *Distinguish between a morpheme and an allomorph.*
 6. *Distinguish between a phoneme and a morpheme.*
 7. *Distinguish between inflection and derivation.*
 8. *Distinguish between free and bound morphemes.*
 9. *Write briefly on (i) the motivations for a morphological analysis; (ii) the formation of plural in English and your mother tongue; (iii) the functions of past tense form in English and your mother tongue.*
 10. *What do you understand by morphological analysis?
Give examples of both 'free' and 'bound' morphemes.*
 11. *Write short note on phoneme, morpheme and grapheme.*
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