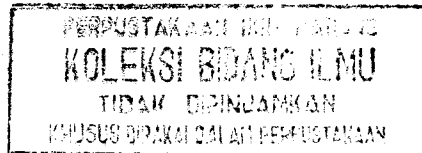


APLIKASI BAHASA INGGRIS
DALAM BIDANG BIOLOGI
(Suatu Bimbingan)

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PERPUSTAKAAN IKIP PADANG
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P R A K A T A

Sebagaimana kita ketahui, pustaka di bidang biologi yang berbahasa Indonesia mulai bermunculan/tersedia di toko-toko buku, namun referensi yang berbahasa Inggris sampai dewasa ini masih merupakan pembanding (bahkan sering masih sebagai sumber) utama. Mengingat alasan atau kenyataan ini kiranya tidaklah berlebihan apabila para calon ilmuwan di bidang biologi (khususnya di Jurusan Pendidikan Biologi) juga ikut menanggapi secara aktif dan konsekuen kemampuan masing-masing dalam menelaah referensi berbahasa Inggris itu secara langsung. Sebab upaya itu merupakan rintisan yang penting dan berarti bagi niat para calon itu memperluas cakrawala ilmu mereka masing-masing.

Menanggapi pandangan di atas, buku ini disusun dengan maksud menyediakan bahan-bahan bimbingan bagi para mahasiswa Jurusan Pendidikan Biologi FPMIPA - IKIP Padang dalam upaya mereka mempersiapkan diri menelaah referensi berbahasa Inggris.

Dengan berpedoman pada hasil pengamatan penulis terhadap kelemahan para mahasiswa dalam menangani bahasa Inggris, penulis cenderung mengajukan rencana bimbingan dalam buku ini secara bertahap. Tahap permulaan yang penulis ajukan adalah Tahap Pemanasan. Tahap ini penulis anggap sebagai tahap penyesuaian diri dalam masa transisi, yakni "dari alam pemikiran berbahasa Indonesia ke alam pemikiran berbahasa Inggris". Kesempatan ini dimaksudkan untuk memberikan kesempatan para mahasiswa "menegakkan kembali" kemampuan mereka berbahasa Inggris dalam bentuk apapun (khu-

susnya melalui bentuk tertulis). Sedangkan materi bimbingan untuk Tahap Pemanasan pada kesempatan ini bersifat tentatif dan merupakan salah satu alternatif. Tahap Pemanasan ini juga merupakan batu dasar untuk melangkah tahap berikutnya yaitu Tahap Pemahaman "Reading".

Dalam Tahap Pemahaman "Reading" ini, penulis bermaksud memberikan kesempatan kepada para mahasiswa agar mereka dapat berlatih dan terbimbing untuk meningkatkan kemampuan memahami referensi berbahasa Inggris secara efektif dan efisien.

Untuk membantu pengokohan situasi dan kedudukan para mahasiswa tersebut menangani bahasa Inggris selama proses di tahap kedua itu, penulis mengajukan Tahap Pemahaman "Listening". Dalam tahap ini penulis bermaksud memberikan kesempatan kepada para mahasiswa untuk memotivasi diri mereka meningkatkan dan mengokohkan kemampuan mereka berbahasa Inggris (sekurang-kurangnya secara pasif). Namun karena sempitnya waktu untuk pembinaan matakuliah ini, maka penulis cenderung meletakkan tahap "listening" ini sebagai tahap aktra.

Di samping itu, dalam kesempatan ini, penulis bermaksud juga mengemukakan penghargaan dan rasa terimakasih kepada saudara Drs. Syansunir Maksun dan Drs. Adjisir, atas segala bantuannya dalam upaya penulisan buku ini.

Selain itu, penulis juga mengharapkan kritik binaan dari para pembaca untuk upaya penyempurnaan buku ini, dengan iringan ucapan terimakasih.

Padang, Juli 1986

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Midsemester II/1986

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Akhir Semester II/1986

PENGANTAR

Dalam menghadapi perkuliahan Aplikasi Bahasa Inggris ini, para mahasiswa diwajibkan untuk melakukan tiga macam kegiatan yakni:

- (1) Latihan Pemanasan: Latihan ini bermaksud memberikan kesempatan kepada para peserta untuk dapat menegakkan kembali kemampuannya berbahasa Inggris, sehingga mereka dapat memanfaatkannya untuk membantu kelancaran perkuliahan ini.
- (2) Kegiatan Pemahaman "Reading": Kegiatan ini bermaksud memberikan kesempatan kepada para peserta untuk dapat memahami kutipan referensi berbahasa Inggris di bidang Biologi melalui kemampuan membaca.
- (3) Kegiatan Pemahaman "Listening": Kegiatan ini bermaksud memberikan kesempatan kepada para peserta untuk dapat memahami kutipan referensi berbahasa Inggris di bidang Biologi melalui kemampuan mendengar.

Latihan Pemanasan

COUNTABLES AND UNCOUNTABLES

Latihan 1

Note: Things we cannot count have no indefinite article, and usually no plural.

Examples: ink, water, wood.

Put into the plural:

- | | |
|-----------------------------|-----------------------------------|
| 1. A dog is an animal. | 7. A garden has a tree. |
| 2. A potato is a vegetable. | 8. An apple grows on a tree. |
| 3. An eye is blue or brown. | 9. A fly is an insect. |
| 4. A fish can swim. | 10. A dog hates a cat. |
| 5. A cow gives milk. | 11. A chicken is a bird. |
| 6. A cat eats meat. | 12. A rose is a beautiful flower. |

Latihan 2

Put into the singular:

- | | |
|----------------------------------|---------------------------------------|
| 1. Horses are animals. | 7. Frenchmen are Europeans. |
| 2. Children are not always good. | 8. Hungry boys eat large dinners. |
| 3. Oranges are good to eat. | 9. Dogs are good friends to men. |
| 4. Gorillas are big apes. | 10. Buffaloes are stronger than cows. |
| 5. Sheep give wool | 11. Fungi are nearly all saprophytes. |
| 6. Mice like rice. | |

Kegiatan 1: Pemahaman melalui membaca

Bacalah kutipan berikut ini baik-baik, dan jawablah pertanyaan-pertanyaan yang menyertainya itu dengan Bahasa Indonesia yang baik dan benar.

CELLS - The Basic Units of Life

All the substances composing an organism are contained in its cells. Thus each cell is a unit mass of protoplasm, or the individual part of which the whole organism is composed. The simplest organisms consist of but one cell. Organisms above this level of organization may be made up of thousands, millions, or even billions of cells. It has been estimated that the human body contains more than 50 thousand billion cells. The size of the organism is determined not by the size of its cells but by their number. Elephant cells are no larger than ant cells. There are just more of them. Large or small, simple or complex, the cell is the unit of structure and function of all living organisms.

Pertanyaan-pertanyaan:

1. How could people know about the substances composing an organism?
2. What do you think; do all organisms get the same level of organization?
3. According to the "Cell Theory", what do you think about the size of organisms?

Tugas:- Tuliskan hasil pemahaman anda masing-masing atas kutipan ini pada kertas lain dengan menggunakan bahasa Indonesia yang baik dan benar.

- Tuliskan pula jawaban-jawaban atas pertanyaan-pertanyaan tersebut di atas.
- Kumpulkan tugas-tugas anda itu sesegera.

Kegiatan 2: Pemahaman melalui membaca

Bacalah kutipan berikut ini baik-baik, dan jawablah pertanyaan-pertanyaan yang menyertainya itu dengan Bahasa Indonesia yang baik dan benar.

BIOLOGICAL SIGNIFICANCE OF PHOTOSYNTHESIS

Were it not for photosynthesis the life of our earth would probably be limited to a few bacteria. There would be no forests or grasslands. Certainly there would be no animal populations. What make the process so vital to life? It provides the chemical link between the inorganic and the organic chemical worlds. You might liken photosynthesis to the crossing of a chemical bridge, with carbon dioxide and water on one side and PGAL and glucose on the other. Chlorophyll, coenzymes, and energy form the bridge.

In discussing the food relations of organisms, we refer to green plants as autotrophs. This term means "self-feeders" and refers to the capability of these organisms to organize organic molecules. Organisms lacking this capacity are classed as heterotrophs, or "other feeders". Animals and nongreen plants such as fungi are among these nutritionally dependent organisms. While many heterotrophs have remarkable chemical abilities, none can produce a molecule of glucose from inorganic materials. In other words, they lack the capacity for photosynthesis and must rely on autotrophs for their basic chemical requirements.

✓ Pertanyaan-pertanyaan:

1. Why would be no animal populations on our earth if there were not photosynthesis? Explain!
2. What do you think if people call "self-feeders" for green plants? Explain!
3. Explain why do animals and nongreen plants belong to heterotrophs.

- ✓ Tugas:
- a) Tuliskan jawaban-jawaban anda itu pada kertas lain.
 - b) Tuliskan pula hasil pemahaman anda atas kutipan itu pada kertas lain tersebut.
 - c) Kumpulkan tugas-tugas anda itu sesegera.

Kegiatan 3: Pemahaman melalui membaca

Bacalah kutipan berikut ini baik-baik, dan jawablah pertanyaan-pertanyaan yang menyertainya itu dengan Bahasa Indonesia yang baik dan benar.

PROTEIN SYNTHESIS

While photosynthesis is limited to the cells of autotrophs, this cannot be said of protein synthesis. No living matter has ever been found which does not contain protein. Every cell organizes its own protein molecules. Thus protein synthesis is a universal phase of cell anabolism.

There is another striking difference between protein synthesis and carbohydrate synthesis. All cells capable of photosynthesis organize the same PGAL and glucose molecules in the same series of chemical reactions. This is not true of proteins. A cell builds specific proteins which vary from species to species, individual to individual, and, to some extent, in various kinds of cells in the same organism. You may have read accounts of attempts to transplant tissues or organs from one individual to another. These transplants are almost always unsuccessful, except between identical twins, because the unique proteins of the recipient set up a reaction to the donor's quite different proteins.

A cell thus expresses individuality in protein synthesis. How is this synthesis regulated? What sort of cellular code determines exactly what proteins will be formed and how these molecules are to be constructed? This is a fascinating story.

Pertanyaan-pertanyaan:

1. What do you say about protein synthesis? Is it limited to the cells of autotrophs? Explain!
2. According to the text, transplantations of tissues or organs from one individual to another are almost always unsuccessful. What do you think? Explain your understanding!

Tugas:a) Tuliskan jawaban-jawaban anda itu pada kertas lain.

b) Tuliskan pula hasil pemahaman anda atas kutipan itu pada kertas lain tersebut.

c) Kumpulkan tugas-tugas anda itu sesegera.

Countables and Uncountables
(Lanjutan)

Latihan 3

Note: Remember that only countables take "a" or "an".

Put "a" or "an" where necessary:

1. ... milk comes from ... cow.
2. We make ... butter and ... cheese from ... milk.
3. ... grass always grows in ... English field.
4. ... cat has ... tail.
5. ... man eats ... meat.
6. ... coffee is ... drink.
7. ... fish swims in ... water.
8. ... bread is made from ... flour, and ... flour is made from ... wheat.
9. ... orange grows on ... tree.
10. ... child must have ... food.
11. ... cow eats ... grass in summer.
12. ... cattle graze in ... meadow.

Latihan 4

Note: Uncountable nouns, and countables in the plural are preceded by "some" when "a certain quantity, or number" is implied.

Examples: Bread is good for us. (All bread, in general.)
Give me some bread. (A certain quantity.)

Add "a" or "an", or "some" where necessary:

1. ... apple has ... sweet taste.
2. ... fruit is very good to eat.
3. ... Australian sheep give us ... very good wool.
4. ... drop of ... water is placed on ... slide.
5. ... ameba has no ... eyes, yet it is sensitive to ... light.
6. ... paramecium is shaped like ... slipper.
7. ... carbon dioxide is ... inorganic compound.
8. ... water provides the invironment for ... aquatic organisms.
9. ... protein molecule contains ... carbon, ... hydrogen, ... oxygen, and nitrogen.
10. ... plant cell usually contains ... vacuoles.
11. ... vacuoles of ... plant cell also contain ... water-soluble pigments.
12. In ... primary wall ... cellulose fibers are arranged in ... network.

Countables and Uncountables
(Lanjutan)

Latihan 5

Note: A (n) is used for any one example of a countable noun. The plural of this is some. It means an unknown number of that noun. We prefer to use there is (are, was, etc.) to introduce this idea instead of the simple verb to be.

There is a broken chair in the corner of the room.

There were some books on this table yesterday.

There'll be a picnic in the forest next Friday.

The Definite Article the is used whenever the noun is identified for us as one special, known example (or certain known examples in the plural)

A man and a boy were going along a dusty road. The man was pushing the boy along the road on a toy bicycle. The bicycle belonged to the boy's sister. ...

Supply "a(n)", "the" or "some" where necessary:

1. ... children love ... fruit.
2. ... child ran across ... street.
3. ... cat loves ... milk.
4. You must give him ... food and ... cup of coffee.
5. ... vegetables are good for ... health.
6. There are ... beautiful flowers in ... park.
7. I want ... glass of ... milk.
8. It is not good to smoke ... cigarette before ... meal.
9. All ... processes of ... cell that relate to ... use of ... food are included in ... metabolism.
10. ... cell expresses individuality in ... protein synthesis.
11. ... biologists know that ... molecule of ... DNA bears ... genetic code formed by its ... nitrogen-containing bases.
12. All of ... activities of ... living cell require ... continuous supply of ... energy.

Latihan 6

Note: See Exercise 5 (Latihan 5).

Where there can be only one certain example that is meant, we normally use "the". (The sun, sky, ceiling, station, etc.) An important group of common nouns (mostly names of places) are used without an article in phrases closely associated with their special purpose of function, but with an article in a more general sense.

Countables and Uncountables
(Lanjutan)

Latihan 6 (Lanjutan)

He went to bed (to sleep). He went to the bed (approached it).

He's at school (learning). I'll meet you at the school.

The ship's in (dry) dock. We walked round the dock(s).

Put it on paper(=write it). There's a mark on the paper.

And similarly with: prison, college, hospital, market, church, harbour(port), barracks, deck, (under) canvas, (at) sea, by train, and a few others.

Compare the following:

(a) There's a horse in the garden (=any single horse).

(b) Horses are animals (=all).

(c) Perhaps we'll see some horses there(=a certain number).

(d) The horses are ready(=definite horses we know about).

Supply "a(n)", "some", or "the" where necessary:

1. There is ... fly in ... lemonade.
2. ... youngest brother is at ... school now. If you go to ... school by tram, you will be just in ... time to meet him.
3. ... birds can fly very high in ... sky.
4. ... donkeys are ... stupid animals.
5. Put ... butter on ... potatoes.
6. I am fond of ... apples with ... cheese.
7. He always smokes ... cigarette with ... cup of ... coffee.
8. We had ... dinner at ... new restaurant ... last night.
9. Let's get ... strawberries for ... tea.
10. I want ... tin of ... peaches, ... sugar, and ... pound of ... raspberry jam.

Kegiatan 4: Pemahaman melalui membaca

Bacalah kutipan berikut ini baik-baik, dan jawablah pertanyaan-pertanyaan yang menyertainya itu dengan Bahasa Indonesia yang baik dan benar.

MIGRATION, VARIATION, AND THE BENEFIT OF CHANGE

When migration occurs so that individuals of a population occupy new areas and interbreed with other populations of the same species, new gene combinations are formed. Let us assume that several members of an animal population migrate to a new area. They take with them certain combinations of genes characteristic of the population of which they have been a part. Their arrival in a new area introduces genetic characteristics that have been absent in this population. By interbreeding, their offspring are also receiving different genes from the new population. The genetic make-up of this entire population may be altered by the migrating organisms. Thus, one result of migration is the production of variations through new gene combinations.

There is another important result. Migration takes plants and animals into new and different environments. This introduces the benefit of change. New characteristics that appear in offspring through mutations and recombinations of genes may result in adaptations that are favorable to the new environment.

Pertanyaan-pertanyaan:

1. What do people mean with migration? Explain!
2. Explain what people mean with the term "interbreeding"!
3. Are there any important results of migration? Describe!

Tugas: a) Tuliskan jawaban-jawaban anda itu serta hasil pemahaman atas kutipan tersebut di atas pada sehelai kertas.

b) Kumpulkan tugas-tugas itu sesegera.

PASSIVE VOICE

Note: Simple construction: appropriate tense of verb "to be" with the past participle.

The passive voice is very important in English. Probably quite 90 per cent. of the passive sentences spoken or written are of the type replacing the indefinite pronoun or reflexives in other languages.

In this important class of passive voice sentences we have an unknown or vague active voice subject; it remains unexpressed in the passive voice. The agent with "by" is not needed.

Cf=confer (L)= compare (E): Someone has stolen my books. (Active sentence with the indefinite subject "someone" occupying the most prominent place.) We prefer: My books have been stolen.

Latihan 1

Turn the following sentences into the passive voice:

(No agents with "by" are required in the following exercise)

1. People always admire this beautiful scenery.
2. He hurt his leg in an accident.
3. One uses milk for making butter and cheese.
4. Somebody left the dog in the garden.
5. They make progress every day in the world of science.
6. No one fed the chickens this morning.
7. Nobody heard a sound.
8. Somebody has cooked this fish very well. *)
9. People may group organs into systems.
10. We find organisms at all levels of organization.

Latihan 2

Note: When the verb in the active voice takes two objects, it is more usual in English to make the personal object the subject of the passive voice.

Example:

Someone gave me a book. --- I was given a book.

The form "A book was given (to) me" would be used when we need to stress this new subject.

Put the following sentences into the passive voice with a personal subject:

1. Someone recommended me another doctor.

*) In the passive voice it is more usual to put an adverb of manner immediately in front of the past participle it qualifies: viz. -"This chair is very well made."

Latihan 2(Lanjt.)

Passive Voice (Lanjutan)

Put the following sentences into the passive voice with a personal subject:

1. Someone recommended me another doctor.
2. They will allow each boy a second plate of ice-cream.
3. Someone is showing my girl-friend Nancy how to bath a baby.
4. They gave my little sister a glass of milk, too.
5. Somebody will show the visitors the new hybrid.
6. They asked the rest of us to be present at the lab on time.
7. Some-one told the new students how to operate the electron microscope.
8. They found many pebble tools thought to have been used for cutting instruments.
9. Somebody will tell you what time the flowers unfold.
10. They will ask us all several questions.

Latihan 3

Note: See Exercises 1. and 2.

The general principle governing the use of the passive voice is as follows: when the main interest of the speaker or writer is on the Predicate, i.e. on the verb activity itself rather than on the active subject, there is a desire to express this idea first. This of course is particularly true of the ideas expressed in Exercise 1, where the subject is of no importance whatever. Thus in the sentence "People speak English all over the world", we are really concerned with "the speaking of English", not the vague subject "people", so the natural tendency is to begin with the predicate, and the passive voice form "English is spoken all over the world" puts the idea in a much better perspective. The agent "by people" is superfluous - we have just used a passive construction to get rid of it anyway!

Warning. In all passive voice exercises the use of "by" with an agent must be rigorously suppressed, except in those examples where our interest in the predicate has led us to use the passive voice, but nevertheless the active subject has some interest of its own and is necessary for complete sense, e.g. "this poem was written by Keats," shows greater interest in the poem (the speaker is presumably discussing it, or reading

Passive Voice (Lanjt.)

Latihan 3 (Lanjt.)

it), but the poet is necessary to complete the sense. Such active subjects as I, we, you, they, one, someone, nobody, people, a man, a boy, the servant, etc., scarcely ever warrant their inclusion in the passive construction.

Prepositions. Prepositions or adverb particles must not be left out with verbs requiring them; there is a tendency to forget them.

Example: They will look after you well.

You will be well looked after. (Note position of adverb of manner).

Put the following sentences into the passive voice, using the part "underlined" as the subject where shown:

1. She showed the visitors the new hybrid.
2. Someone asked the student a difficult question.
3. They told her to be quick.
4. She gave me a bottle of metilalcohol at the laboratory.
5. Somebody told the students to wait outside.
6. She will look after the little girl well.
7. A car ran over our dog. (agent).
8. A guide pointed out the Pyramids to me. (agent.)
9. Nobody has answered my question properly.
10. Somebody has brought this child up very badly.

Latihan 4

Note: See Exercises 1 and 2

"People say" = "it is said."

The passive form here only brings in another vague subject, the introductory "it". So we generally prefer the subject of the clause introduced by "it" as the subject of the passive voice.

Example: People say that figs are better for us than bananas.

It is said that figs are better for us than bananas.

Figs are said to be better for us than bananas.

(This last form is the best)

Another good use of the passive, more usually found in the written language than in speech, is as a device to save changing the substance of a sentence.

Passive Voice (Lanjutan)

Latihan 4 (Lanjutan)

Example: He spoke at great length; people asked him many questions at the end, which he answered satisfactorily.

This is more concisely expressed with the help of the passive voice: He spoke at great length, was asked many questions at the end, and answered them all satisfactorily.

Put the following sentences into the passive voice:

1. Somebody must have taken it while I was out.
2. They treated us to some ice-cream.
3. I can assure you I will arrange everything in time. (Two passives).
4. Somebody will meet the visitors at the Botanical Garden.
5. A sudden increase in water pressure would break the dam.
6. One cannot eat an orange if nobody has peeled it. (Two passives).
7. People say tortoises live longer than elephants. (Tortoises

Final Remarks on The Passive Voice

A great deal of harm has been done by teaching the passive voice as if it were merely another way of expressing a sentence in the active voice.

We ought to stress the fact that the passive voice has an important and special place in the language; most sentences that are good in the active voice as just grotesque curiosities when put into the passive voice. The proper uses of the passive voice have been carefully pointed out in the last four exercises. Most of the sentences fall more naturally into a passive form than the form given.

The agent with "by" is unnatural in English; most sentences needing it belong rightfully to the active voice, and should never be put into the passive voice, even as an academic exercise.

Kegiatan 5: Pemahaman melalui membaca

Bacalah kutipan berikut ini baik-baik, dan jawablah pertanyaan-pertanyaan yang menyertainya itu dengan Bahasa Indonesia yang baik dan benar.

ADVANTAGES AND DISADVANTAGES
OF ASEXUAL REPRODUCTION

Reproduction of the nonsexual type is common among lower plants and animals and is advantageous in various ways. It is a relatively simple process involving only mitosis, in contrast to the complexities of egg and sperm formation found in sexual reproduction. Only one individual or parent is involved, and hence there is no necessity for complex mating procedures. Large numbers of offspring can be produced simultaneously. For example, one sporangium of a bread mold can produce thousands of spores, each of which can grow into a new mold. Organisms often use asexual reproduction as a means of dispersal, as is the case with spores. These are frequently microscopic bodies that are light enough to be blown about in the air.

Offspring produced by asexual means are nearly exact copies of the parent and consequently exhibit almost no variability. This is an advantage when the parent is well adapted to a stable environment. On the other hand, a species that employs only asexual reproduction has a limited range of adaptability and cannot adjust rapidly to changing environmental situations. This is the major disadvantage of the process.

Pertanyaan-pertanyaan:

1. Are there any advantages of asexual reproduction? Bring them forward! /is
2. Select what/the major disadvantage of asexual reproduction from the text!

Tugas: a) Tuliskan jawaban-jawaban anda itu serta hasil pemahaman anda atas kutipan tersebut di atas pada sehelai kertas.

b) Kumpulkan tugas-tugas itu sesegera.

Kegiatan 7: Pemahaman melalui pendengaran

Para pendengar yang budiman. Berikut ini akan dibacakan suatu kutipan. Dengarkanlah baik-baik. Untuk membantu pemahaman anda tentang isi kutipan itu, anda ada baiknya membuat catatan seperlunya. Kita mulai.

Topik: ANIMAL BREEDING

The principles used in plant breeding apply to animal breeding as well. Mass selection has long been a method of producing highly desirable breeds of animals.

The results of years of selective breeding are well illustrated in the modern breeds of poultry. The Leghorn, for example, has been bred for its ability to lay large numbers of eggs. All of its energies are directed toward egg production rather than the production of body flesh. The Plymouth Rock has been developed as a dual-purpose fowl and is ideal for egg production and meat. Large breeds, like the Brahma, Cochin, and ^OCornish, are famous for their delicious meat, rather than for egg production.

The modern turkey, with massive body and broad breast covered with thick layers of white meat, is quite a contrast to the slender bird the Pilgrims found in the New England forest. The modern turkey has been bred for the highest possible flesh production. It spends its life, often on wire, eating a scientifically prepared diet and building up large, little-used muscles, better suited to being eaten than to flying and perching high in trees.

DAFTAR REFERENSI

A l l e n , W. Stannard. Living English Structure - A Practice Book For Foreign Students. Longmans - P. T. Dian Rakyat, 1970.

O t t o , James H., & Albert Towle. Modern Biology . New York: Holt, Rinehart and Winston, Inc., 1965.

Tugas III :A. Put into the plural:

1. A rose is a beautiful flower.
2. A fly is an insect.
3. A potato is a vegetable.
4. An eye is blue or brown.
5. A cow gives milk.

B. Put into the singular:

6. Horses are animals.
7. Buffaloes are stronger than goats.
8. Fungi are nearly all saprophytes.
9. Mice like rice.
10. Oranges are good to eat.

C. Put "a" or "an", or "some" where necessary:

- a) (1)grass always grows in(2)English field.
- b) (3)bread is made from(4)flour, and(5)flour is made from (6)wheat.
- c) (7)Australian sheep give us(8)very good wool.
- d) (9)protein molecule contains(10)carbon, (11)hydrogen, (12)oxy-
gen, and(13)nitrogen.
- e) (14)vacuoles of(15)plant cell also contain(16)water-soluble pigments.

D. Supply "a(n)", "the" or "some" where necessary:

(1)man and(2)boy were going along(3)dusty road. (4)man was pushing(5)boy along(6)road on(7)toy bicycle. (8)bicycle belonged to(9)boy's sister. (10)people on(11)road were looking at(12)boy, who had been greeting while smiling nicely to every body on(13)road. "What(14)nice boy," said(15)passers-by immediately.

L a m p i r a n 2

Lembaran Jawaban dan Lembaran Tes
Akhir Semester II/1986

Nama:.....No.BP.:.....M.k.:.....
Jurs.:.....Program:.....Tanggal:.....

TUGAS I: Permasalahan I:

- 1. A B 2. A B 3. A B 4. A B 5. A B 6. A B C D E
- 7. A B C D E 8. A B C D E 9. A B C D E
- 10. A B C D E 11. A B C D E 12. A B C D E

Kewajiban I:

- 1).....
- 2).....

TUGAS II: Permasalahan II:

- 13. A B 14. A B 15. A B 16. A B 17. A B 18. A B C D E
- 19. A B C D E 20. A B C D E 21. A B C D E
- 22. A B C D E 23. A B C D E 24. A B C D E

Kewajiban II:

- 1).....
- 2).....

TUGAS III:

- 1).....
- 2).....
- 3).....
- 4).....
- 5).....
- 6).....
- 7).....
- 8).....
- 9).....
- 10).....
- 11).....
- 12).....
- 13).....
- 14).....
- 15).....

=====

- PETUNJUK UMUM:**
1. Lembaran Soal jangan diberi coretan apapun.
 2. Tulislah dahulu di Lembaran Jawaban anda:
 - a) No.Urut Soal anda di sudut kanan atas;
 - b) Nama, No.BP., dan Program anda, serta Semester ke;
 - c) Mata Ujian yang anda hadapi sekarang.
 3. Jawaban dianggap salah, jika:
 - a) Pilihan ditukar;
 - b) Pilihan lebih dari satu.
-

PENGARAHAN: Soal Ujian ini terdiri dari beberapa tugas, yaitu Tugas I, Tugas II, dan Tugas III. Tugas I dan II masing-masing pada pokoknya terdiri dari Bacaan, Permasalahan, dan Kewajiban. Setiap Bacaan berupa bacaan pendek yang isinya perlu anda pahami baik-baik, karena setiap bacaan diikuti oleh soal yang harus anda selesaikan. Setiap soal tersebut terdiri dari Permasalahan dan Kewajiban. Setiap Permasalahan terdiri dari 3 macam Kelompok Soal Objektif dengan petunjuk seperti tertulis berikut ini. Sedangkan setiap Kewajiban terdiri dari permintaan-permintaan tersendiri. Tugas III terdiri dari soal-soal yang berkaitan dengan Latihan Pemanasan dalam "English Structure" dengan petunjuk permintaan yang dianggap sudah cukup jelas.

Petunjuk Kelompok Soal Objektif:

A. Kelompok Soal SALAH/BENAR:

Silangilah (A) apabila pernyataan-pernyataan berikut anda anggap SALAH, dan silangilah (B) apabila pernyataan-pernyataan itu anda anggap BENAR.

B. Kelompok Soal SEBAB - AKIBAT: Silangilah:

- (A) - jika pernyataannya betul, alasannya betul, dan keduanya menunjukkan hubungan sebab-akibat;
- (B) - jika pernyataannya betul, alasannya betul, tetapi keduanya tidak menunjukkan hubungan sebab-akibat;
- (C) - jika pernyataannya betul, sedang alasannya salah;
- (D) - jika pernyataannya salah, sedang alasannya betul;
- (E) - jika pernyataannya maupun alasannya salah.

C. Kelompok Soal PILIHAN GANDA: Silangilah:

- (A) - jika alternatif (1), (2), dan (3) betul;
- (B) - jika alternatif (1) dan (3) betul;
- (C) - jika alternatif (2) dan (4) betul;
- (D) - jika hanya alternatif (4) yang betul;
- (E) - jika semua alternatif betul.

TUGAS I : Bacalah kutipan berikut ini baik-baik, kemudian selesaikanlah Permasalahan dan Kewajiban yang menyertainya.

Bacaan I

Mendel's Law of Segregation. Mendel based his third law of heredity, referred to as the law of segregation, on this reasoning. According to this law, a pair of factors (genes) is segregated, or separated, during the formation of gametes (spores in lower plants) in reduction division. That is, a gamete contains only one gene of a pair, the other having gone to another gamete. Furthermore, the composition of one gene is not altered by the presence of another gene in a pair. For example, a recessive gene in a hybrid is not altered by the presence of a dominant gene. If, in an offspring of the hybrid, the recessive gene is paired with another recessive gene, the recessive character will reappear.

Permasalahan I

A. Kelompok Soal SALAH/BENAR

1. Alinea Bacaan I ini menegaskan tentang hukum hereditas Mendel ke-3, dan hanya mengemukakan masalah turun-menurunnya sifat dari orangtua kepada anak-anaknya.
- 2. Masalah bagaimana terpisahnya pasangan gena dari orangtua kepada anak keturunannya tidak merupakan satu-satunya inti pembahasan dalam alinea itu.
- 3. Alinea ini ternyata tidak menegaskan bahwa hukum hereditas Mendel ke-3 itu juga dirumuskan sebagai hukum pemisahan.
- .4. Dalam alinea ini dikemukakan juga bahwa segregasi pasangan gena pada tumbuhan rendah terjadi pada saat pembentukan spora-sporanya.
- .5. Di situ dikemukakan juga secara tidak langsung bahwa pembelahan reduksi memberikan peluang terjadinya segregasi gena.

B. Kelompok Soal SEBAB - AKIBAT

6. Alinea ini menegaskan juga bahwa pada keturunan hibrida ciri resesif sulit muncul kembali meskipun gena resesif berpasangan dengan gena resesif lainnya.
- S E B A B
- Suatu gena resesif, dalam keturunan hibrida, dapat digantikan oleh gena dominan yang ada di situ.
7. Bilamana terjadinya segregasi pasangan gena tidak dikemukakan dalam alinea ini.
- S E B A B
- Alinea ini hanya mengemukakan pengertian prinsip segregasi.
8. Dari alinea ini kita dapat mengambil kesimpulan bahwa tumbuhan rendah juga mengikuti hukum hereditas Mendel ke-3.
- S E B A B
- Tumbuhan rendah juga mengalami pembelahan reduksi pada saat pembentukan spora-sporanya.
9. Dari alinea ini kita dapat menyimpulkan juga bahwa segregasi gena pada tumbuhan rendah terjadi bukan pada saat pembentukan gamet-gametnya.
- S E B A B
- Pembelahan reduksi pada tumbuhan rendah terjadi bukan pada saat pembentukan gamet-gametnya.

C. Kelompok Soal PILIHAN GANDA

10. Sejalan dengan penegasan dalam alinea Bacaan I, dalam pembelahan reduksi terjadi:
- 1) Hukum hereditas Mendel ke-3.
 - 2) Hukum pemisahan gena.
 - 3) Hukum segregasi gena.
 - .4) Pembentukan gamet.
11. Dari alinea ini dapat disimpulkan bahwa segregasi gena itu terjadi bertepatan dengan saat:
- .1) Pembentukan gamet pada kebanyakan organisme.
 - .2) Pembentukan gamet pada invertebrata.
 - .3) Pembentukan spora pada tumbuhan rendah.
 - .4) Pembentukan serbiksari pada tumbuhan tinggi.

12. Kita dapat juga mengambil kesimpulan dari alinea ini bahwa gamet dari kebanyakan hewan yang terbentuk itu:

- 1) Dapat sangat bervariasi berdasarkan banyaknya pasangan gena.
- 2) Mungkin sekali mengalami penggantian suatu gena oleh gena dominan yang ada disitu.
- 3) Tidak mungkin mengalami penggantian suatu gena oleh gena lain yang kebetulan ada juga didalamnya.
- 4) Setelah fertilisasi, gena resesif dalam keturunan hibrida mengalami penggantian oleh gena-gena dominan pasangannya yang ada disitu.

Kewajiban I

- 1) Tentukan kalimat topik dari alinea Bacaan I ini, lalu tuliskan/salinlah kalimat itu pada ruang yang telah disediakan di Lembaran Jawaban anda.
- 2) Tuliskan juga terjemahan bebas dari kalimat topik tersebut.

TUGAS II : Bacalah kutipan berikut ini baik-baik, kemudian selesaikanlah Permasalahan dan Kewajiban yang menyertainya.

Bacaan II

Mutation Theory of Evolution. Mutation as a basis for evolution was proposed by Hugo De Vries, a Dutch botanist, when he presented his mutation theory in 1901. De Vries had found two evening primrose plants that were different from their parent stock and that bred true by producing these variations in offspring. He experimented for many years and found that, from 50,000 specimens of evening primrose, at least 800 plants showed striking noninherited variations that were transmitted to offspring. From his study of the evening primrose, De Vries concluded that similar mutations occurred frequently in other organisms and that this was the basis for the evolution of life through the ages.

Permasalahan II

A. Kelompok Soal SALAH/BENAR

- 13. Sebagaimana dikemukakan dalam alinea Bacaan II ini, Hugo De Vries, yang merupakan salah seorang perumus teori mutasi, adalah seorang ahli kimia organik bangsa Jerman.
- .14. Alinea ini juga menegaskan bahwa Hugo De Vries merupakan ilmuwan pertama yang mengemukakan mutasi sebagai dasar evolusi .
- 15. Teori mutasi yang dirumuskan oleh Hugo De Vries dikemukakannya kepada dunia pada permulaan abad 19.
- 16. Dari alinea ini kita dapat menyimpulkan bahwa pengalaman sehari-hari Hugo De Vries telah memberikan motivasi kepada dirinya untuk menyimpulkan mutasi jarang terjadi pada berbagai organisme.
- .17. Alinea ini menegaskan juga bahwa kesimpulan Hugo De Vries tentang adanya mutasi pada berbagai organisme merupakan dasar terjadinya evolusi kehidupan sepanjang masa.

2.

TUGAS III : Soal dari Latihan Pemanasan dalam "English Structure".

Put the following sentences into the passive voice, using the part "underlined" as the subject where shown:

1. He hurt his arm in an accident.
2. One uses milk for making butter and cheese.
3. No one fed the ducks and rabbits this afternoon.
4. Nobody has cooked the fish very well.
5. We find organisms at all levels of organization.
6. They will allow each student a second plate of ice-cream.
7. Somebody will tell you what time the flowers unfold.
8. Someone told the new students how to operate the electron microscope.
9. He will show the visitors the new hybrid.
10. They gave my little sister a glass of milk, too.
11. Someone told the students to be quick.
12. A truck ran over my duck this morning.(Agent).
13. A guide pointed out the leopards to me at the zoo.(Agent).
14. She gave him a bottle of metilalcohol at the lab.
15. She will look after the little girl well.
