English Manuals

«Green building»

(Bamboo, rattan, sisal and reed)

in

«Professional English»

(for the second-year full-time Bachelor students specializing in «Construction»)

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</tbody>
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INTRODUCTION

These instructions are compiled to provide essential practice for students who already have a basic knowledge of English and specializing in Construction.

These tasks are to change the attitudes of both teachers and students to classroom activities. The teacher who is worried that students will be missing something important will find included in the activities which develop intensive and extensive reading skills, writing in a variety of styles, and oral tasks involving varying degrees of subtlety. The teacher who brings these tasks into the study is not depriving the students of language practice, but is, instead, providing a richer context for such practice.

When teachers use texts for reading they are often too concerned with what was written at the expense of how. Reading in any language is an affective as well as a cognitive process. The teacher’s role is not that of corrector or judge, but rather that of enabler. The teacher assists with language, errors, but should not replace the student’s perceptions with his or her own.

Each unit contains the following:

• reading
• lexical exercises
• a series of assignments that mirror real-life activities.
The animal I really dig,
Above all others is the pig.
Pigs are noble. Pigs are clever,
Pigs are courteous. However,
Now and then, to break this rule,
One meets a pig who is a fool.
What, for example, would you say,
If strolling through the woods one day,
Right there in front of you - you saw
A pig who'd built his house of STRAW?

(Roald Dahl Three little pigs)

UNIT 1


Read and translate the text.

TEXT 1. Materials efficiency. *Sustainable architecture*

Building materials typically considered to be 'green' include lumber from forests that have been certified to a third-party forest standard, rapidly renewable
plant materials like bamboo and straw, dimension stone, recycled stone, recycled metal (see: copper sustainability and recyclability), and other products that are non-toxic, reusable, renewable, and/or recyclable. For concrete a high performance or Roman self-healing concrete is available. The EPA (Environmental Protection Agency) also suggests using recycled industrial goods, such as coal combustion products, foundry sand, and demolition debris in construction projects.

EXERCISES:

1. Choose the right answer:

1. Building materials typically considered to be '________' include lumber from forests that have been certified to a third-party forest standard, rapidly renewable plant materials like bamboo and straw, dimension stone, recycled stone, recycled metal (see: copper sustainability and recyclability), and other products that are non-toxic, reusable, renewable, and/or recyclable.
   A. 'brown'
   B. 'green'
   C. 'blue'
   D. 'white'

2. For concrete a high performance or ________ ________ ________ is available.
   A. Roman self-healing cement
   B. Roman self-healing concrete
   C. Roman self-healing limestone
   D. Roman self-healing clay

3. The EPA (Environmental Protection Agency) also suggests using recycled industrial goods, such as ________ ________ ________, foundry sand, and demolition debris in construction projects.
A. oil combustion products  
B. coal combustion products  
C. mineral combustion products  
D. limestone combustion products

2. **Match the right variants:**

<table>
<thead>
<tr>
<th>Building</th>
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<tbody>
<tr>
<td>Third-party forest</td>
<td>Materials</td>
</tr>
<tr>
<td>Rapidly renewable plant</td>
<td>Straw</td>
</tr>
<tr>
<td>Bamboo and</td>
<td>Materials</td>
</tr>
<tr>
<td><strong>Dimension</strong></td>
<td><strong>Stone</strong></td>
</tr>
<tr>
<td>Recycled</td>
<td>Stone</td>
</tr>
<tr>
<td>Recycled</td>
<td>Recyclability</td>
</tr>
<tr>
<td><strong>Copper sustainability and</strong></td>
<td><strong>Metal</strong></td>
</tr>
<tr>
<td>Other</td>
<td>Performance</td>
</tr>
<tr>
<td>High</td>
<td>Products</td>
</tr>
<tr>
<td>Roman self-healing</td>
<td>Agency</td>
</tr>
<tr>
<td><strong>Environmental Protection</strong></td>
<td><strong>Concrete</strong></td>
</tr>
<tr>
<td>Recycled industrial</td>
<td>Products</td>
</tr>
<tr>
<td>Coal combustion</td>
<td>Goods</td>
</tr>
<tr>
<td>Foundry</td>
<td>Projects</td>
</tr>
<tr>
<td>Demolition</td>
<td>Sand</td>
</tr>
<tr>
<td>Construction</td>
<td>Debris</td>
</tr>
</tbody>
</table>

3. What can you tell about materials efficiency **and sustainable architecture**? Try to reproduce the text in your own words.

**UNIT 2**

**Key words:** bamboo – Indian cane – to be – large genus – clumping bamboos – most species of – rather – large – with numerous branches – emerging from – nodes – one or two – much larger than – rest – branches – as long as – native to – Southeast Asia – China – Himalayas – New Guinea – Melanesia – Northern Territory of Australia – also – reportedly naturalized – in other regions – e.g. – Africa – Latin America – various oceanic islands
Indian cane is a large genus of clumping bamboos. Most species of the Indian cane are rather large, with numerous branches emerging from the nodes, and one or two much larger than the rest. The branches can be as long as 11 m (33 ft). They are native to Southeast Asia, China, the Himalayas, New Guinea, Melanesia, and the Northern Territory of Australia. They are also reportedly naturalized in other regions, e.g. Africa, Latin America, and various oceanic islands.
EXERCISES:

1. **Choose the right answer:**

   1. ________ _______ is a large genus of clumping bamboos.
      A. African cane
      B. Indian cane
      C. American cane
      D. Australian cane

   2. Most ________ of the Indian cane are rather large, with numerous branches emerging from the nodes, and one or two much larger than the rest.
      A. trees
      B. buildings
      C. species
      D. materials

   3. The ________ can be as long as 11 m (33 ft).
      A. branches
      B. roots
      C. buds
      D. flowers

   4. They are native to ________ ________, China, the Himalayas, New Guinea, Melanesia, and the Northern Territory of Australia.
      A. Southeast Europe
      B. Southeast America
      C. Southeast Africa
      D. Southeast Asia

   5. They are also reportedly naturalized in other regions, e.g. Africa, Latin America, and ________ ________ ________.
      A. various oceanic islands
      B. various coastal islands
      C. various seaside islands
      D. various river islands

2. **Match the right variants:**

<table>
<thead>
<tr>
<th>Indian</th>
<th>bamboos</th>
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</thead>
<tbody>
<tr>
<td>large</td>
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<tr>
<td>clumping</td>
<td>genus</td>
</tr>
<tr>
<td>most</td>
<td>branches</td>
</tr>
<tr>
<td>numerous</td>
<td>species</td>
</tr>
</tbody>
</table>
3. What is the second name of bamboo?
4. Try to reproduce the text in your own words.

UNIT 3


---

**Read and translate the text.**

**TEXT 3. Bamboo as a building material**

Bamboo – is a unique plant. Despite the fact that it belongs to the family of bamboo grass, it is quite easy and hard wood. The uniqueness of bamboo lies in the
ability to increase very rapidly - 120 cm per day. Due to its unpretentiousness in relation to the conditions of growth, bamboo is common on all continents (except Antarctica, of course). Wide distribution and diversity in use made the bamboo an indispensable material in many areas of production. It is used in construction and decoration of houses.

EXERCISES:

1. Choose the right answer:

1. ________ – is a unique plant.
   A. Sisal
   B. Bamboo
   C. Cane
   D. Rattan

2. Despite the fact that it belongs to the family of ________ ________, it is quite easy and hard wood.
   A. bamboo trees
   B. bamboo bushes
   C. bamboo grass
   D. bamboo flowers

3. The uniqueness of bamboo lies in the ability to increase very rapidly - 120 cm ________ ________.
   A. per day
   B. per minute
   C. per second
   D. per hour
4. Due to its unpretentiousness in relation to the conditions of growth, bamboo is common on all ________ (except Antarctica, of course).
A. islands
B. countries
C. continents
D. mainland
5. Wide distribution and diversity in use made the bamboo an ________ ________ in many areas of production.
A. indispensable material
B. unnecessary material
C. useless material
D. unprofitable material
6. It is used in ________ ________ ________ of houses.
A. painting and decoration
B. construction and finishing
C. construction and decoration
D. construction and painting

2. Match the right variants:

| unique       | grass     |
|--------------|--|        |
| bamboo       | plant     |
| easy and hard| day       |
| per          | wood      |
| all          | production|
| wide distribution and | decoration |
| indispensable   | diversity  |
| many areas of     | continents |
| construction and  | material   |

3. What can you tell about the bamboo plant? Try to reproduce the text in your own words.

UNIT 4

Key words: today – bamboo – to be widely used (for) – manufacture of – building and decorative materials – bamboo wallpaper – tiles – fabrics – blinds – rattan nets –
Today, bamboo is widely used for the manufacture of building and decorative materials - bamboo wallpaper, tiles, fabrics, blinds, rattan nets. The bamboo ceilings have an original look. For a unique natural color and beauty of wood, bamboo is a popular decorating material of many designers. The finish made of bamboo gives a sense of unity with nature. Bamboo products will give any room a unique style and uniqueness, and ecological purity of the material makes you feel cheerful and comfortable in this room. Despite the apparent lightness and fragility, bamboo is quite a durable material and has solid wood. No wonder that houses of bamboo are popular for some people in our time. The building materials made of bamboo are easy to use and does not require complex care. To prolong the life and protection from external influences, sometimes it is used the lacquered bamboo.
EXERCISES:

1. Choose the right answer:

1. Today, bamboo is widely used for the manufacture of building and decorative materials - ________ ________, tiles, fabrics, blinds, rattan nets.
   A. bamboo toilet-paper
   B. bamboo wallpaper
   C. bamboo cardboard
   D. bamboo rice-paper

2. The ________ ________have an original look.
   A. bamboo ceilings
   B. bamboo walls
   C. bamboo floors
   D. bamboo windows

3. For a ________ ________ ________ and beauty of wood, bamboo is a popular decorating material of many designers.
   A. common unnatural color
   B. ordinary inorganic color
   C. unique natural color
   D. usual natural color

4. The ________ made of bamboo gives a sense of unity with nature.
   A. decor
   B. finish
   C. structure
   D. item
5. Bamboo products will give any room a unique style and uniqueness, and _______ _______ of the material makes you feel cheerful and comfortable in this room.
   A. ecological purity
   B. ecological impurity
   C. ecological uncleanliness
   D. ecological non-integrity

6. Despite the apparent _______ _______ _______, bamboo is quite a durable material and has solid wood.
   A. weight and fragility
   B. load and fragility
   C. lightness and fragility
   D. clog and fragility

7. _______ _______ that houses of bamboo are popular for some people in our time.
   A. No wonder
   B. Little wonder
   C. Any wonder
   D. Some wonder

8. The _______ _______ made of bamboo are easy to use and does not require complex care.
   A. building structures
   B. building units
   C. building blocks
   D. building materials

9. To prolong the life and protection from _______ _______, sometimes it is used the lacquered bamboo.
   A. internal influences
   B. interior influences
   C. external influences
   D. exterior influences

2. Match the right variants:

| building and decorative designers |
| bamboo material |
| rattan wallpaper |
| bamboo nets |
| original ceilings |
| unique natural color and look |
3. What can you tell about the bamboo plant? Try to reproduce the text in your own words.

UNIT 5

Rattan (from the Malay rotan) is the name for the roughly 600 species of palms in the tribe Calameae (Greek 'kálamos' - reed), native to tropical regions of Africa, Asia and Australasia. Most rattans differ from other palms in having slender stems, 2–5 cm diameter, with long internodes between the leaves; also, they are not trees but are vine-like, scrambling through and over other vegetation. Rattans are also superficially similar to bamboo. Unlike bamboo, rattan stems ("malacca") are solid, and most species need structural support and cannot stand on their own. However, some genera are more like typical palms, with stouter, erect trunks. Many rattans have spines which act as hooks to aid climbing over other plants, and to deter herbivores. Rattans have been known to grow up to hundreds of metres long. Most (70%) of the world's rattan population exist in Indonesia, distributed among Borneo, Sulawesi, Sumbawa islands. The rest of the world's supply comes from the Philippines, Sri Lanka, Malaysia and Bangladesh.
EXERCISES:

1. Choose the right answer:

1. Rattan (from the Malay rotan) is the name for the roughly 600 species of palms in the tribe Calameae (Greek 'kálamos' = reed), native to ________ ________ of Africa, Asia and Australasia.
   A. subtropical regions
   B. tropical regions
   C. tundra regions
   D. pampas regions

2. Most rattans differ from other ________ in having slender stems, 2–5 cm diameter, with long internodes between the leaves; also, they are not trees but are vine-like, scrambling through and over other vegetation.
   A. trees
   B. bushes
   C. palms
   D. leaves

3. Rattans are also superficially similar to ________.
   A. bamboo
   B. sisal
   C. reed
   D. cane

4. Unlike bamboo, rattan ________ ("malacca") are solid, and most species need structural support and cannot stand on their own.
   A. leaves
   B. flowers
C. shoots  
D. stems  
5. However, some genera are more like ________ ________, with stouter, erect trunks.  
A. atypical palms  
B. untypical palms  
C. non-typical palms  
D. typical palms  
6. Many rattans have ________ which act as hooks to aid climbing over other plants, and to deter herbivores.  
A. spines  
B. buds  
C. thorns  
D. leaves  
7. Rattans have been known to grow up to hundreds of ________ long.  
A. millimetres  
B. centimetres  
C. metres  
D. kilometres  
8. Most (70%) of the ________ ________ ________ exist in Indonesia, distributed among Borneo, Sulawesi, Sumbawa islands.  
A. Europe's rattan population  
B. Asia's rattan population  
C. America's rattan population  
D. world's rattan population  
9. The rest of the ________ ________ comes from the Philippines, Sri Lanka, Malaysia and Bangladesh.  
A. world's supply  
B. world's stock  
C. world's store  
D. world's produce

2. Match the right variants:

<table>
<thead>
<tr>
<th>species of</th>
<th>rattans</th>
</tr>
</thead>
<tbody>
<tr>
<td>tropical</td>
<td>palms</td>
</tr>
<tr>
<td>most</td>
<td>regions</td>
</tr>
<tr>
<td>other</td>
<td>stems</td>
</tr>
<tr>
<td>slender</td>
<td>palms</td>
</tr>
</tbody>
</table>
3. What can you tell about the rattan plant? Try to reproduce the text in your own words.

UNIT 6

Generally, raw rattan is processed into several products to be used as materials in furniture making. The various species of rattan range from several millimetres up to 5–7 cm in diameter. From a strand of rattan, the skin is usually peeled off, to be used as rattan weaving material. The remaining "core" of the rattan can be used for various purposes in furniture making. Rattan is a very good material mainly because it is lightweight, durable, suitable for outdoor use, and—to a certain extent—flexible. Rattans are extensively used for making furniture and baskets. When cut into sections, rattan can be used as wood to make furniture. Rattan accepts paints and stains like many other kinds of wood, so it is available in many colours; and it can be worked into many styles. Moreover, the inner core can be separated and worked into wicker.
EXERCISES:

1. Choose the right answer:

1. Generally, raw rattan is processed into several products to be used as materials in ________ ________.  
   A. fabric manufacture  
   B. furniture making  
   C. glass making  
   D. chandelier making  

2. The ________ ________ of rattan range from several millimetres up to 5–7 cm in diameter.  
   A. various species  
   B. solo species  
   C. mono species  
   D. only species  

3. From a strand of rattan, the skin is usually peeled off, to be used as ________ ________.  
   A. rattan forging material  
   B. rattan casting material  
   C. rattan weaving material  
   D. rattan knitting material  

4. The remaining "________" of the rattan can be used for various purposes in furniture making.  
   A. shell  
   B. core  
   C. skin  
   D. cover  

5. Rattan is a ________ ________ ________ mainly because it is lightweight, durable, suitable for outdoor use, and — to a certain extent — flexible.  
   A. very bad material  
   B. very poor material  
   C. very good material  
   D. very cheap material  

6. Rattans are extensively used for making furniture and _________.  
   A. bags  
   B. baskets  
   C. valises  
   D. trunks
7. When cut into ________, rattan can be used as wood to make furniture.
A. pieces
B. cuts
C. sections
D. patches

8. Rattan accepts ________ ________ ________ like many other kinds of wood, so it is available in many colours; and it can be worked into many styles.
A. paints and stains
B. paints and polishes
C. paints and emulsions
D. polishes and stains

9. Moreover, the inner core can be separated and worked into ________.
A. pin
B. needle
C. thread
D. wicker

2. **Match the right variants:**

<table>
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<th>raw</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>furniture</td>
<td>core</td>
</tr>
<tr>
<td>various</td>
<td>purposes</td>
</tr>
<tr>
<td>strand of</td>
<td>making</td>
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<td>rattan weaving</td>
<td>&quot;core&quot;</td>
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<td>remaining</td>
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<td>styles</td>
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<td>use</td>
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<td>material</td>
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<td>many other</td>
<td>stains</td>
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<td>many</td>
<td>trunks</td>
</tr>
<tr>
<td>many</td>
<td>kinds</td>
</tr>
<tr>
<td>inner</td>
<td>rattan</td>
</tr>
</tbody>
</table>

3. What can you tell about the rattan material? Try to reproduce the text in your own words.
UNIT 7

Key words: handicraft and arts – rattan – shelter material – many of – properties – to make – suitable for – furniture – also – popular choice for – handicraft and art pieces – uses – to include – rattan baskets – plant containers – other decorative works – Indonesians – rattan furniture – circa – to be also used – crooks – high-end umbrellas – most natives or locals – rattan rich countries – to employ – aid of this sturdy plant – in their home building projects – to be heavily used as – housing material – in rural areas – skin – plant or – wood – to be primarily used for – weaving

Read and translate the text.

TEXT 7. Handicraft and arts. Rattan as a shelter material

Many of the properties of rattan that make it suitable for furniture also make it a popular choice for handicraft and art pieces. Uses include rattan baskets, plant containers and other decorative works. Indonesians are making rattan furniture, circa 1948. It is also used to make crooks for high-end umbrellas. Most natives or locals from the rattan rich countries employ the aid of this sturdy plant in their home
building projects. It is heavily used as a housing material in the rural areas. The skin of the plant or wood is primarily used for weaving.

EXERCISES:

1. Choose the right answer:

1. Many of the properties of rattan that make it suitable for furniture also make it a _______ _______ for handicraft and art pieces.
   A. least choice
   B. popular choice
   C. poorest choice
   D. favourite choice

2. Uses include rattan baskets, _______ _______ and other decorative works.
   A. plant pots
   B. plant containers
   C. plant beds
   D. plant baskets

3. _______ are making rattan furniture, circa 1948.
   A. Asians
   B. Indonesians
   C. Indians
   D. Africans

4. It is also used to make _______ for high-end umbrellas.
A. sticks  
B. stems  
C. crooks  
D. needles  

5. Most natives or locals from the rattan rich countries employ the aid of this sturdy plant in their ________ ________ ________.  
A. street building projects  
B. industrial building projects  
C. plant building projects  
D. home building projects  

6. It is heavily used as a housing material in the ________ ________ .  
A. rural areas  
B. urban areas  
C. megapolis areas  
D. city areas  

7. The skin of the ________ ________ ________ is primarily used for weaving.  
A. plant or flower  
B. flower or wood  
C. grass or wood  
D. plant or wood  

2. Match the right variants:  

<table>
<thead>
<tr>
<th>Popular</th>
<th>Pieces</th>
</tr>
</thead>
<tbody>
<tr>
<td>handicraft and art</td>
<td>baskets</td>
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<td>choice</td>
</tr>
<tr>
<td>plant</td>
<td>works</td>
</tr>
<tr>
<td>other decorative</td>
<td>containers</td>
</tr>
<tr>
<td>rattan</td>
<td>umbrellas</td>
</tr>
<tr>
<td>high-end</td>
<td>projects</td>
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<td>most</td>
<td>areas</td>
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<td>sturdy</td>
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<td>rural</td>
<td>plant</td>
</tr>
<tr>
<td>plant or</td>
<td>furniture</td>
</tr>
</tbody>
</table>
3. What can you tell about the rattan? Try to reproduce the text in your own words.

UNIT 8


Read and translate the text.
TEXT 8. Sisal

Sisal (botanical name Agave sisalana), is a species of Agave native to southern Mexico but widely cultivated and naturalized in many other countries. It yields a stiff fibre used in making various products. The term sisal may refer either to the plant's
common name or the fibre, depending on the context. It is sometimes referred to as "sisal hemp", because for centuries hemp was a major source for fibre, and other fibre sources were named after it. The sisal fibre is traditionally used for rope and twine, and has many other uses, including: paper, cloth, wall coverings, carpets, and dartboards.

EXERCISES:

1. Choose the right answer:

1. Sisal (botanical name Agave sisalana), is a species of Agave native to ________ ________ but widely cultivated and naturalized in many other countries.
   A. southern Brasil
   B. southern Peru
   C. southern Mexico
   D. southern Argentina

2. It yields a ________ ________ used in making various products.
   A. stiff fibre
   B. soft fibre
   C. bland fibre
   D. tender fibre

3. The term sisal may refer either to the ________ ________ ________ or the fibre, depending on the context.
   A. plant's various names
   B. plant's different name
C. plant's usual name
D. plant's common name
4. It is sometimes referred to as "_______ ________", because for centuries hemp was a major source for fibre, and other fibre sources were named after it.
A. sisal hemp
B. sisal marijuana
C. Indian grass
D. sisal cannabis
5. The sisal fibre is traditionally used for ________ _____ ___ ________, and has many other uses, including: paper, cloth, wall coverings, carpets, and dartboards.
A. rope and string
B. string and twine
C. rope and twine
D. rope and twist

2. Match the right variants:

<table>
<thead>
<tr>
<th>botanical</th>
<th>products</th>
</tr>
</thead>
<tbody>
<tr>
<td>southern</td>
<td>countries</td>
</tr>
<tr>
<td>many other</td>
<td>uses</td>
</tr>
<tr>
<td>stiff</td>
<td>sisal</td>
</tr>
<tr>
<td>various</td>
<td>sources</td>
</tr>
<tr>
<td>term</td>
<td>fibre</td>
</tr>
<tr>
<td>plant's common</td>
<td>source</td>
</tr>
<tr>
<td>&quot;sisal&quot;</td>
<td>name</td>
</tr>
<tr>
<td>major</td>
<td>name</td>
</tr>
<tr>
<td>other fibre</td>
<td>hemp&quot;</td>
</tr>
<tr>
<td>sisal</td>
<td>twine</td>
</tr>
<tr>
<td>rope and</td>
<td>Mexico</td>
</tr>
<tr>
<td>many other</td>
<td>coverings</td>
</tr>
<tr>
<td>wall</td>
<td>fibre</td>
</tr>
</tbody>
</table>

3. What can you tell about the sisal? Try to reproduce the text in your own words.
Traditionally, sisal has been the leading material in everyday life because of its strength, durability, ability to stretch, affinity for certain dyestuffs, and resistance to deterioration in saltwater. The importance of this traditional use is diminishing with competition from polypropylene and the development of other haymaking techniques—while new higher-valued sisal products are to be developed—apart from ropes, twines, general cordage, to be used in low-cost and specialty paper, dartboards, buffing cloth, filters, geotextiles, mattresses, carpets, handicrafts, wire rope cores, Macramé, to be utilized as environmentally friendly strengthening agent, to replace asbestos, fibre-glass, in composite materials, in various uses— including automobile industry, lower-grade fibre, to be processed by paper industry—because of its high content of cellulose and hemicelluloses, medium-grade fibre, to be used in cordage industry—for making ropes, baler and binder twine, higher-grade fibre, after treatment—to be converted into yarns, to be used by carpet industry, sisal wall covering—to meet abrasion, tearing resistance standards of American Society for Testing and Materials, National Fire Protection Association.

UNIT 9

Key words: uses—traditionally—sisal—to be—leading material—in everyday life—because of—its strength—durability—ability—to stretch—affinity for—certain dyestuffs—resistance to—deterioration in saltwater—importance of—this traditional use—to be diminishing with—competition—polypropylene—development of—other haymaking techniques—while—new higher-valued sisal products—to be developed—apart from—ropes—twines—general cordage—to be used in—low-cost and specialty paper—dartboards—buffing cloth—filters—geotextiles—mattresses—carpets—handicrafts—wire rope cores—Macramé—to be utilized as—environmentally friendly strengthening agent—to replace—asbestos—fibre-glass—in composite materials—in various uses—including—automobile industry—lower-grade fibre—to be processed by—paper industry—because of—its high content of—cellulose and hemicelluloses—medium-grade fibre—to be used in—cordage industry—for making—ropes—baler and binder twine—higher-grade fibre—after treatment—to be converted into—yarns—to be used by—carpet industry—sisal wall covering—to meet—abrasion—tearing resistance standards of—American Society for Testing and Materials—National Fire Protection Association.
techniques, while new higher-valued sisal products have been developed. Apart from ropes, twines, and general cordage, sisal is used in low-cost and specialty paper, dartboards, buffing cloth, filters, geotextiles, mattresses, carpets, handicrafts, wire rope cores, and Macramé. Sisal has been utilized as an environmentally friendly strengthening agent to replace asbestos and fibre-glass in composite materials in various uses including the automobile industry. The lower-grade fibre is processed by the paper industry because of its high content of cellulose and hemicelluloses. The medium-grade fibre is used in the cordage industry for making ropes, baler and binder twine. The higher-grade fibre after treatment is converted into yarns and used by the carpet industry. Sisal wall covering meets the abrasion and tearing resistance standards of the American Society for Testing and Materials and of the National Fire Protection Association.

EXERCISES:

1. Choose the right answer:

1. Traditionally, sisal has been the leading material in everyday life because of its strength, ________, ability to stretch, affinity for certain dyestuffs, and resistance to deterioration in saltwater.
   A. wear-ability
   B. durability
   C. wear-out
   D. tear-out
2. The importance of this ________ ________ is diminishing with competition from polypropylene and the development of other haymaking techniques, while new higher-valued sisal products have been developed.
   A. traditional use  
   B. innovative use  
   C. new use  
   D. common use

3. Apart from ropes, twines, and general cordage, sisal is used in low-cost and specialty paper, dartboards, buffing cloth, filters, geotextiles, mattresses, carpets, handicrafts, wire rope cores, and ________.
   A. knitting  
   B. papier-mache  
   C. Macramé  
   D. weaving

4. Sisal has been utilized as an ________ ________ ________ ________ to replace asbestos and fibre-glass in composite materials in various uses including the automobile industry.
   A. environmentally friendly weakening agent  
   B. environmentally friendly strengthening agent  
   C. environmentally friendly strengthening reagent  
   D. environmentally friendly weakening reagent

5. The ________-________ ______ __ is processed by the paper industry because of its high content of cellulose and hemicelluloses.
   A. higher-grade fibre  
   B. lower-grade fibre  
   C. medium -grade fibre  
   D. average-grade fibre

6. The medium-grade fibre is used in the ________ ________ for making ropes, baler and binder twine.
   A. jute industry  
   B. weaving industry  
   C. carton industry  
   D. cordage industry

7. The higher-grade fibre after treatment is converted into yarns and used by the ________ ________.
   A. fabric industry  
   B. carpet industry  
   C. canvas industry  
   D. linen industry
8. ________ ________ ________ meets the abrasion and tearing resistance standards of the American Society for Testing and Materials and of the National Fire Protection Association.
A. Sisal wall paper  
B. Sisal window blinds  
C. Sisal wall covering  
D. Sisal wall canvassing

2. **Match the right variants:**

<table>
<thead>
<tr>
<th>leading</th>
<th>industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>everyday</td>
<td>material</td>
</tr>
<tr>
<td>certain</td>
<td>Association</td>
</tr>
<tr>
<td>traditional</td>
<td>life</td>
</tr>
<tr>
<td>haymaking</td>
<td>products</td>
</tr>
<tr>
<td>new higher-valued sisal</td>
<td>dyestuffs</td>
</tr>
<tr>
<td>general</td>
<td>strengthening agent</td>
</tr>
<tr>
<td>low-cost and specialty</td>
<td>cordage</td>
</tr>
<tr>
<td>buffing</td>
<td>paper</td>
</tr>
<tr>
<td>wire rope</td>
<td>cloth</td>
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<td>environmentally friendly</td>
<td>industry</td>
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<tr>
<td>composite</td>
<td>uses</td>
</tr>
<tr>
<td>various</td>
<td>materials</td>
</tr>
<tr>
<td>automobile</td>
<td>resistance standards</td>
</tr>
<tr>
<td>lower-grade</td>
<td>covering</td>
</tr>
<tr>
<td>paper</td>
<td>fibre</td>
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<tr>
<td>high</td>
<td>fibre</td>
</tr>
<tr>
<td>medium-grade</td>
<td>cores</td>
</tr>
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<td>cordage</td>
<td>twine</td>
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<tr>
<td>baler and binder</td>
<td>content</td>
</tr>
<tr>
<td>higher-grade</td>
<td>techniques</td>
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<td>carpet</td>
<td>fibre</td>
</tr>
<tr>
<td>sisal wall</td>
<td>industry</td>
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<tr>
<td>abrasion and tearing</td>
<td>and Materials</td>
</tr>
<tr>
<td>American Society for Testing</td>
<td>use</td>
</tr>
<tr>
<td>National Fire Protection</td>
<td>industry</td>
</tr>
</tbody>
</table>
3. What can you tell about the sisal use? Try to reproduce the text in your own words.

UNIT 10


Read and translate the text.

TEXT 10. Carpets

Despite the yarn durability sisal is known for, slight matting of sisal carpeting may occur in high-traffic areas. A sisal carpet does not build up static nor does it trap dust, so vacuuming is the only maintenance required. High-spill areas should be treated with a fibre sealer and for spot removal, a drycleaning powder is recommended. Depending on climatic conditions, sisal will absorb air humidity or release it, causing expansion or contraction. Sisal is not recommended for areas that receive wet spills or rain or snow. Sisal is used by itself in carpets or in blends with wool and acrylic for a softer hand.
EXERCISES:

1. Choose the right answer:

1. Despite the yarn durability sisal is known for, _______ _______ of sisal carpeting may occur in high-traffic areas.
   A. strong matting
   B. hard matting
   C. severe matting
   D. slight matting

2. A _______ _______ does not build up static nor does it trap dust, so vacuuming is the only maintenance required.
   A. sisal carpet
   B. bamboo carpet
   C. rattan carpet
   D. cane carpet

3. High-spill areas should be treated with a fibre sealer and for spot removal, a _______ _______ is recommended.
   A. wet-cleaning powder
   B. dry-cleaning powder
   C. steam-cleaning powder
   D. washing powder

4. Depending on climatic conditions, sisal will absorb _______ _______ or release it, causing expansion or contraction.
   A. water humidity
   B. steam humidity
   C. fallout humidity
D. air humidity
5. Sisal is not recommended for areas that receive wet spills or _______ ________ ________.
   A. frost or snow
   B. rain or shower
   C. rain or snow
   D. ice or snow
6. Sisal is used by itself in _______ or in blends with wool and acrylic for a softer hand.
   A. tapestry
   B. canvass
   C. carpets
   D. fabric

2. Match the right variants:

<table>
<thead>
<tr>
<th>yarn</th>
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<tbody>
<tr>
<td>slight</td>
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</tr>
<tr>
<td>sisal</td>
<td>maintenance</td>
</tr>
<tr>
<td>high-traffic</td>
<td>areas</td>
</tr>
<tr>
<td>sisal</td>
<td>carpet</td>
</tr>
<tr>
<td>only</td>
<td>areas</td>
</tr>
<tr>
<td>high-spill</td>
<td>conditions</td>
</tr>
<tr>
<td>fibre</td>
<td>removal</td>
</tr>
<tr>
<td>spot</td>
<td>sealer</td>
</tr>
<tr>
<td>drycleaning</td>
<td>spills</td>
</tr>
<tr>
<td>climatic</td>
<td>humidity</td>
</tr>
<tr>
<td>air</td>
<td>powder</td>
</tr>
<tr>
<td>wet</td>
<td>hand</td>
</tr>
<tr>
<td>wool and</td>
<td>carpeting</td>
</tr>
<tr>
<td>softer</td>
<td>acrylic</td>
</tr>
</tbody>
</table>

3. What can you tell about the sisal as a material? Try to reproduce the text in your own words.
UNIT 11


---

**Read and translate the text.**

**TEXT 11. Reed (cane)**

Reed or cane (Lat.-Scirpus) is a genus of aquatic, grass-like species in the family of Cyperaceae (the sedges), many with the common names club-rush or bulrush. Other common names are deer-grass or grass-weed. They have grass-like leaves, and clusters of small spikelets, often brown. Some species (e.g. S. lacustris) can reach a height of 3 m, while others (e.g. S. supinus) are much smaller, only reaching 20–30 cm tall. The genus has a nearly cosmopolitan distribution, found on every continent except Africa and Antarctica. Many species are common in wetlands.
and can produce dense vegetation, along rivers, in coastal deltas and in ponds and potholes. Although flooding is the most important factor affecting its distribution, drought, ice scour, grazing, fire and salinity also affect its abundance. It can survive unfavourable conditions like prolonged flooding, or drought, as buried seeds. Reed or cane species are often planted to inhibit soil erosion and provide habitat for other wildlife.

EXERCISES:

1. Choose the right answer:

1. Reed or cane (Lat.-Scirpus) is a genus of ______, ______-_______ _______ in the family of Cyperaceae (the sedges), many with the common names club-rush or bulrush.
   A. aquatic, grass-like species
   B. aquatic, herb-like species
   C. aquatic, bush-like species
   D. aquatic, tree-like species
2. Other common names are ________ - ________ or grass-weed.
   A. ox-grass
   B. deer-grass
   C. cow-grass
   D. goat-grass
3. They have grass-like leaves, and clusters of small spikelets, often _______.

38
A. green
B. black
C. brown
D. white

4. ________ ________ (e.g. S. lacustris) can reach a height of 3 m, while others (e.g. S. supinus) are much smaller, only reaching 20–30 cm tall.
A. Some species
B. All species
C. No species
D. Every species

5. The genus has a nearly ________ ________, found on every continent except Africa and Antarctica.
A. limited distribution
B. bounded distribution
C. confined distribution
D. cosmopolitan distribution

6. Many species are common in ________ and can produce dense vegetation, along rivers, in coastal deltas and in ponds and potholes.
A. wetlands
B. dry-lands
C. bog-lands
D. marshlands

7. Although flooding is the most important factor affecting its distribution, ________, ice scour, grazing, fire and salinity also affect its abundance.
A. hurricane
B. flood
C. drought
D. typhoon

8. It can survive unfavourable conditions like prolonged flooding, or drought, as ________ ________.
A. buried roots
B. buried seeds
C. buried sprouts
D. buried buds

9. Reed or cane species are often planted to inhibit ________ ________ and provide habitat for other wildlife.
A. soil erosion
B. land erosion
C. desert erosion
D. area erosion

2. **Match the right variants:**

<table>
<thead>
<tr>
<th>aquatic grass-like</th>
<th>spikelets</th>
</tr>
</thead>
<tbody>
<tr>
<td>common</td>
<td>species</td>
</tr>
<tr>
<td>other common</td>
<td>leaves</td>
</tr>
<tr>
<td>grass-like</td>
<td>species</td>
</tr>
<tr>
<td>small</td>
<td>distribution</td>
</tr>
<tr>
<td>some</td>
<td>names</td>
</tr>
<tr>
<td>nearly cosmopolitan</td>
<td>species</td>
</tr>
<tr>
<td>every</td>
<td>vegetation</td>
</tr>
<tr>
<td>many</td>
<td>names</td>
</tr>
<tr>
<td>dense</td>
<td>continent</td>
</tr>
<tr>
<td>coastal</td>
<td>factor</td>
</tr>
<tr>
<td>most important</td>
<td>conditions</td>
</tr>
<tr>
<td>ice</td>
<td>salinity</td>
</tr>
<tr>
<td>fire and</td>
<td>deltas</td>
</tr>
<tr>
<td>unfavourable</td>
<td>scour</td>
</tr>
<tr>
<td>prolonged</td>
<td>erosion</td>
</tr>
<tr>
<td>buried</td>
<td>species</td>
</tr>
<tr>
<td>reed or cane</td>
<td>flooding</td>
</tr>
<tr>
<td>soil</td>
<td>seeds</td>
</tr>
</tbody>
</table>

3. What can you tell about the reed or cane? Try to reproduce the text in your own words.

**UNIT 12**

Did you know that the metal reduces the human bio-field by 30%, 15% brick, wood is neutral on the effects of chemically treated straw increases the human bio-field by 5%, not treated with 15%. Of course, you can be skeptical about these figures, but that the house of natural materials gives an incomparable warmth and comfort, no one can deny. These homes are called passive houses, or eco-friendly homes. These homes do not only preserve natural resources, they do not pollute the environment, they create a clean space for humans. Maintaining natural moisture and a clean air, sound, optimum temperature - all this assists to the health.
EXERCISES:

1. Choose the right answer:

1. Did you know that the metal reduces the human bio-field by 30%, 15% brick, wood is neutral on the effects of _______ _______ _______ increases the human bio-field by 5%, not treated with 15%.
   A. physically treated straw
   B. biologically treated straw
   C. chemically treated straw
   D. non-treated straw

2. Of course, you can be skeptical about these _______, but that the house of natural materials gives no incomparable warmth and comfort, no one can deny.
   A. facts
   B. reasons
   C. figures
   D. conditions

3. These homes are called _______ _______ , or eco-friendly homes.
   A. passive houses
   B. active houses
   C. perfect houses
   D. warm houses

4. These homes do not only preserve natural resources, they do not pollute the environment, they create a clean space for _______.
   A. animals
   B. birds
   C. humans
   D. reptiles

5. Maintaining _______ _______ and a clean air, sound, optimum temperature - all this assists to the health.
   A. no moisture
   B. natural moisture
   C. artificial moisture
   D. some moisture

2. Match the right variants:

<table>
<thead>
<tr>
<th>human</th>
<th>comfort</th>
</tr>
</thead>
<tbody>
<tr>
<td>incomparable warmth and</td>
<td>bio-field</td>
</tr>
<tr>
<td>these</td>
<td>houses</td>
</tr>
</tbody>
</table>
3. What can you tell about bulrush? Try to reproduce the text in your own words.

**UNIT 13**

Every year round the world there is a growing interest in homes that are constructed from natural materials. Statistics shows that in Europe, 30% of homes are built from natural materials. The most common eco-houses are houses made of wood, adobe (mud and straw additives) et al. But there is more material available that is bulrush. Bulrush (common reed) grows in floodplains, along the shores of lakes, marshy places. While there’s onset of early frosts the plant dries, its leaves fall, but reeds remains upright. Here at this time, when the water is covered with ice, and harvests reeds for construction. Harvesting takes place by hand or by a machine. There are known up to 300 species of reed, five species are used in construction. Reeds must be characteristic of brown-golden color with a glossy hard surface and hollow inside. In Ukraine, the harvest of reeds can be in November and February.

EXERCISES:

1. Choose the right answer:

1. Every year round the world there is a ________ ________ in homes that are constructed from natural materials.
   A. growing interest
   B. lessening interest
   C. growing indifference
   D. growing unconcern

2. ________ shows that in Europe, 30% of homes are built from natural materials.
   A. Experience
   B. Statistics
   C. Sociology
   D. Psychology
3. The most common ________ - ________ are houses made of wood, adobe (mud and straw additives) et al.
   A. eco-houses
   B. bio-houses
   C. geo-houses
   D. houses

4. But there is more material available that is ________.
   A. bamboo
   B. rattan
   C. sisal
   D. bulrush

5. Bulrush (common reed) grows in ________, along the shores of lakes, marshy places.
   A. dry-plains
   B. floodplains
   C. canyon
   D. ravines

6. While there’s onset of ________ ________ the plant dries, its leaves fall, but reeds remains upright.
   A. late frosts
   B. early frosts
   C. no frosts
   D. early warming

7. Here at this time, when the ________ is covered with ice, and there’s harvests of reeds for construction.
   A. land
   B. air
   C. water
   D. trees

8. ________ takes place by hand or by a machine.
   A. Harvesting
   B. Planting
   C. Cutting
   D. Production

9. There are known up to 300 species of reed, five species are used in ________.
   A. food
   B. construction
   C. agriculture
   D. pharmacy
10. Reeds must be characteristic of _______ - _______ ________ with a glossy hard surface and hollow inside.
A. brown-white color  
B. brown-beige color  
C. brown-golden color  
D. brown-yellow color  
11. In ________, the harvest of reeds can be in November and February.
A. Norway  
B. England  
C. France  
D. Ukraine

2. Match the right variants:

<table>
<thead>
<tr>
<th>every</th>
<th>material</th>
<th>growing</th>
<th>reed</th>
</tr>
</thead>
<tbody>
<tr>
<td>natural</td>
<td>interest</td>
<td>most common</td>
<td>materials</td>
</tr>
<tr>
<td>mud and straw</td>
<td>eco-houses</td>
<td>more</td>
<td>additives</td>
</tr>
<tr>
<td>common</td>
<td>places</td>
<td>marshy</td>
<td>surface</td>
</tr>
<tr>
<td>early</td>
<td>year</td>
<td>five</td>
<td>frosts</td>
</tr>
<tr>
<td>brown-golden</td>
<td>species</td>
<td>glossy hard</td>
<td>color</td>
</tr>
</tbody>
</table>

3. What can you tell about bulrush? Try to reproduce the text in your own words.

UNIT 14

Key words: reed slab – effective insulation – increasingly – people – to be returning to – use of – construction materials – donated to (by) – nature – many reasons – one of – main – to be – environmental cleanliness – safety – if – to be in search of – material – to cope with – role of – effective insulation – best – than – reed plate – hardly to be found – reed slab – to be considered – best and most effective insulation
Increasingly, people are returning to the use of construction materials donated to us by nature. There are many reasons, but one of the main is environmental cleanliness and safety. If you are in search of a material that would cope with the role of effective insulation, best than a reed plate can hardly to be found. A reed slab is considered the best and most effective insulation, as well as pressed cane, as thick as 15 cm has similar performance to conserve heat, as well as masonry, made in two and a half brick. A reed slab – is a unique insulation material, which it is possible to use it as insulation in the construction of low-rise buildings. If we speak about a reed slab, it is pressed cane firmware which was carried out with the use of galvanized wire. Reed slabs come in various sizes and thickness, so everyone will be able to choose for themselves the best option. Generally, the use of reed slabs has been going on for many centuries, and its use is possible to carry out the insulation of not only
walls, but also of floors, mansard roofs. In addition, the boards of cane help to get a good sound insulation.

EXERCISES:

1. Choose the right answer:

1. Increasingly, people are returning to the use of construction materials donated to us by ________.
   A. people  
   B. gods  
   C. nature  
   D. construction groups  

2. There are many ________, but one of the main is environmental cleanliness and safety.
   A. reasons  
   B. ways  
   C. know-hows  
   D. conditions  

3. If you are in ________ of a material that would cope with the role of effective insulation, best than a reed plate can hardly to be found.
   A. need  
   B. trouble  
   C. search  
   D. house
4. A reed slab is considered the best and most effective insulation, as well as ________ ________, as thick as 15 cm has similar performance to conserve heat, as well as masonry, made in two and a half brick.
   A. pressed cane  
   B. pressed gypsum  
   C. pressed carton  
   D. pressed paper
5. A reed slab – is a unique insulation material, which it is possible to use it as insulation in the construction of ________-_______ ________.
   A. high-rise buildings  
   B. low-rise buildings  
   C. medium-rise buildings  
   D. skyscraper buildings
6. If we speak about a reed slab, it is pressed cane firmware which was carried out with the use of ________ ________.
   A. charged wire  
   B. unpowered wire  
   C. galvanized wire  
   D. bare wire
7. Reed slabs come in ________ ________ and thickness, so everyone will be able to choose for themselves the best option.
   A. various shapes  
   B. various colours  
   C. various length  
   D. various sizes
8. Generally, the use of reed plates has been going on for ________ ________, and its use is possible to carry out the insulation of not only walls, but also of floors, mansard roofs.
   A. many months  
   B. many years  
   C. many hours  
   D. many centuries
9. In addition, the boards of cane help to get a ________ ________ ________.
   A. bad sound insulation  
   B. good sound insulation  
   C. poor sound insulation  
   D. good light insulation

2. Match the right variants:
3. What can you tell about the reed slabs? Try to reproduce the text in your own words.

**UNIT 15**

Slabs made of reeds have the following advantage: excellent moisture resistance, which is manifested when a wet slab dries fairly quickly, without losing its shape and physical properties; there is no possibility of existence of insects and rodents, inability to discharge toxic substances, easy to use. The use of reed slabs during construction or during repair helps to create a unique microclimate in the house, which is in the process of nature itself. This explains the popularity of the reed slabs, not only in Russia but also worldwide. The cane material can be used not only in pavilions, roof tent or roofed huts, bungalows, but also as the lining of the walls of the bar, the bar itself, stationary tents for trade and so on, it is especially important near the sea or river, generally close to various bodies of water. This lining material of reed or cane, gives not only beautiful, attractive appearance, but also brings cool on a hot summer day. The main thing is the right approach to the roof made of reeds or cane.
EXERCISES:

1. Choose the right answer:

1. ________ made of reeds have the following advantage: excellent moisture resistance, which is manifested when a wet slab dries fairly quickly, without losing its shape and physical properties; there is no possibility of existence of insects and rodents, inability to discharge toxic substances, easy to use.
   A. Slabs
   B. Girders
   C. Partitions
   D. Bays

2. The use of reed slabs during construction or during repair helps to create a ________ ________ in the house, which is in the process of nature itself.
   A. awful microclimate
   B. unique microclimate
   C. polluted microclimate
   D. dusty microclimate

3. This explains the popularity of the reed slabs, not only in ________ but also worldwide.
   A. Ukraine
   B. Russia
   C. Poland
   D. USA
4. The cane material can be used not only in ________, roof tent or roofed huts, bungalows, but also as the lining of the walls of the bar, the bar itself, stationary tents for trade and so on, it is especially important near the sea or river, generally close to various bodies of water.
A. huts
B. tents
C. houses
D. pavilions

5. This ________ ________ of reed or cane, gives not only beautiful, attractive appearance, but also brings cool on a hot summer day.
A. roofing material
B. building material
C. finishing material
D. lining material

6. The main thing is the ________ ________ to the roof made of reeds or cane.
A. wrong approach
B. any approach
C. right approach
D. no approach

2. Match the right variants:

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</tr>
<tr>
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<td>resistance</td>
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<td>substances</td>
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<td>main</td>
<td>day</td>
</tr>
<tr>
<td>right</td>
<td>appearance</td>
</tr>
</tbody>
</table>
3. What can you tell about the reed slabs? Try to reproduce the text in your own words.

UNIT 16


*Read and translate the text.*
TEXT 16. Know-how

While construction of the roof made of reed or cane the hardest part is a subsystem, so to speak a roof girder and it can be quite simple, a ready-made farm sheathe using reeds and the owner thanks to the finish of the roof in return receives a presentable gazebo. All you need is to pick dry reed shoots, put them in a stack, head to head and cut off the soft tops. There are two ways to lay reeds on the roof. The first method is to knit bundles of reeds and then lay them on the roof, and the second - just to plank reed (cane) or straw on the roof. Beams tally is not too tight, two, three tacks are quite enough for the entire length of the beam. In some places there should be made potholders, in other places there should be screwed mounting on the roof. For installation you can take ordinary screws and nails, then it is important not to forget the gasket or engraver to put before them to be screwed. It can be easily done with the stapler in places linking beams. Simply lay straw or cane on the roof and with one long thread fix the entire length of the structure, and then break through by means of staples or screws to fasten a string of 5-Th-Th-10 cm. There is also an opportunity for the entire length of the roof to fix it with the help of the ordinary wooden planks, such as crates. Under reeds there is a crate, or simply hydro-polyethylene, if you need an extra protection from rain. To a large extent these measures are necessary of course if you have a private house and the roof made of reeds. Experience shows that if the air humidity of 65% is retained for reed and wood the flame retardant treatment is required.

EXERCISES:

1. Choose the right answer:

1. While construction of the roof made of reed or cane the hardest part is a subsystem, so to speak a roof girder and it can be quite simple, a ready-made girder
sheathe using reeds and the owner thanks to the finish of the roof in return receives a ________ ________.
A. presentable house
B. presentable cottage
C. presentable villa
D. presentable gazebo
2. All you need is to pick ________ ________ ________, put them in a stack, head to head and cut off the soft tops.
A. wet reed shoots
B. dry reed shoots
C. soft reed shoots
D. hard reed shoots
3. There are two ways to lay reeds on the ________.
A. roof
B. floor
C. ceiling
D. wall
4. The first method is to knit ________ of reeds and then lay them on the roof, and the second - just to plank reed (cane) or straw on the roof.
A. piles
B. bundles
C. heaps
D. lumps
5. ________ ________ is not too tight, two, three tacks are quite enough for the entire length of the beam.
A. Beams gap
B. Beams tally
C. Beams hole
D. Beams slot
6. In some places there should be made potholders, in other places there should be screwed ________ on the roof.
A. mounting
B. dismantling
C. disassembling
D. stripping
7. For installation you can take ordinary ________ and nails, then it is important not to forget the gasket or engraver to put before them to be screwed.
A. nuts
B. bolts
C. screws  
D. pins  
8. It can be easily done with the ________ in places linking beams.  
A. puncher  
B. pricker  
C. clip  
D. stapler  
9. Simply lay straw or cane on the roof and with one long ________ fix the entire length of the structure, and then break through by means of staples or screws to fasten a string of 5-Th-Th-10 cm.  
A. filament  
B. thread  
C. fibre  
D. string  
10. There is also an opportunity for the entire length of the roof to fix it with the help of the ordinary wooden planks, such as ________.  
A. crates  
B. framework  
C. grates  
D. lattice  
11. Under reeds there is a crate, or simply hydro-polyethylene, if you need an extra protection from ________.  
A. wind  
B. snow  
C. rain  
D. load  
12. To a large extent these measures are necessary of course if you have a ________ ________ and the roof made of reeds.  
A. public house  
B. private house  
C. summer house  
D. guest house  
13. Experience shows that if the ________ ________ of 65% is retained for reed and wood the flame retardant treatment is required.  
A. water humidity  
B. air humidity  
C. heat humidity  
D. steam humidity
2. **Match the right variants:**

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<tr>
<th>hardest</th>
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<tr>
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<td>dry reed</td>
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<td>air</td>
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</tr>
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</table>

3. **What can you tell about the reed roof? Try to reproduce the text in your own words.**

**UNIT 17**

**Key words:** bulrush – to be – bog-plant – high humidity – not to be – terrible for – because – even having – heavy downpours – water – to penetrate – no more than – in reed cover – few hours later – to dry – naturally – first of all – necessary – to prepare – reed building material – previously – to be fastened and woven – in sheaves – by hand – these bundles – to be tightly stacked – on wooden beams – now – on special machines – reed slabs – to be made – to be evenly stacked – between – wooden uprights – machine – to be pressed – then – fastened reed slabs of length – width – thickness – to be made ready for – project – linked by means of – ropes – wires – then evenly trimmed – building material – to be ready – technology of – construction
Read and translate the text.
TEXT 17. How to build a house of reeds?

Bulrush – is a bog-plant, high humidity is not terrible for it, because even having heavy downpours water penetrates no more than 2-3 cm in reed cover. A few hours later it dries naturally. First of all it is necessary to prepare reed building material. Previously, bulrush is fastened and woven in sheaves by hand. These bundles are tightly stacked on wooden beams. Now on special machines reed slabs are made. Bulrush is evenly stacked between the wooden uprights of the machine and pressed. Then fastened reed slabs of the length - 250 (220) cm, the width - 90 (100) cm, and thickness - 12 (30) cm – are made ready for the project. Linked by means of ropes, wires, and then evenly trimmed. The building material is ready. The technology of construction of eco-houses made of reeds has been improved. For example, manufacturing companies can offer complete reed slabs with the definite strapping. In this case, the construction of eco-reed mounted frame with reinforced concrete slabs can be plastered while manufactured. Using slabs in construction of eco-reed is significant for cost saving timber.
EXERCISES:

1. Choose the right answer:

1. Bulrush – is a bog-plant, high humidity is not terrible for it, because even having heavy downpours ________ penetrates no more than 2-3 cm in reed cover.
   A. air
   B. water
   C. moisture
   D. steam

2. A few ________ later it dries naturally.
   A. seconds
   B. minutes
   C. hours
   D. days

3. First of all it is necessary to prepare ________ ________ ________.
   A. bamboo building material
   B. rattan building material
   C. sisal building material
   D. reed building material

4. Previously, bulrush is fastened and woven in ________ by hand.
   A. piles
   B. bundles
   C. heaps
   D. sheaves

5. These bundles are tightly stacked on ________ ________.
A. iron beams
B. wooden beams
C. steel beams
D. metal beams

6. Now on special machines ________ ________ are made.
A. reed carpets
B. reed mats
C. reed rugs
D. reed slabs

7. Bulrush is evenly stacked between the wooden uprights of the ________ and pressed.
A. house
B. machine
C. material
D. structure

8. Then fastened reed slabs of the length - 250 (220) cm, the width - 90 (100) cm, and thickness - 12 (30) cm – are made ready for the ________.
A. project
B. design
C. construction
D. renovation

9. Linked by means of ________, wires, and then evenly trimmed.
A. twine
B. ropes
C. fibres
D. strings

10. The ________ ________ is ready.
A. building material
B. building project
C. building design
D. building structure

11. The ________ of construction of eco-houses made of reeds has been improved.
A. method
B. technology
C. way
D. means

12. For example, ________ ________ can offer complete reed slabs with the definite strapping.
A. manufacturing factories
B. manufacturing plants
C. manufacturing companies
D. manufacturing groups

13. In this case, the construction of eco-reed mounted frame with _______ _______ _______ can be plastered while manufactured.
A. reinforced concrete slabs
B. reinforced reed slabs
C. reinforced cement slabs
D. reinforced stone slabs

14. Using _______ in construction of eco-reed is significant for cost saving timber.
A. bricks
B. slabs
C. girders
D. framework

2. Match the right variants:

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<td>timber</td>
</tr>
<tr>
<td>cost saving</td>
<td>slabs</td>
</tr>
</tbody>
</table>

3. What can you tell about houses made of reeds? Try to reproduce the text in your own words.
UNIT 18


Read and translate the text.

TEXT 18. Reed roofs

In Europe, the reed roof became popular 200 years ago, and the interest in them does not weaken over time. The modern West is focused on the use of clean and safe building materials. By the way, all over the world there are government programs to support the use of environmentally friendly raw materials in industry, construction, energy. The fact is that the reed roof in Europe belongs to the category of elite and highly sought-after. So, 1 sq m of the thatched roof costs 50-60 euros. For a small house with an area of 60 sq m it is required to have a reed roof of the area of 300 sq m. So, the house of a simple natural material becomes a source of pride for its owner. Reed is a unique material. It is durable in use. Natural properties of reeds are those that assist to its durability and reliability – it does not rot. It has a tubular structure,
thereby in laying. Reed is well ventilated, withstands extreme temperatures. This does not allow moisture to penetrate the coating. It is a natural protection from weather at home. The surface of the roof of a house of reeds is rough. This delays the snow cover and serves as additional insulation. Reed roofs are long-term of 50-80 years.

EXERCISES:

1. Choose the right answer:

1. In ________, the reed roof became popular 200 years ago, and the interest in them does not weaken over time.
   A. America
   B. Europe
   C. Asia
   D. Antarctic

2. The ________ ________ is focused on the use of clean and safe building materials.
   A. modern East
   B. modern West
   C. modern North
   D. modern South

3. By the way, all over the world there are ________ ________ to support the use of environmentally friendly raw materials in industry, construction, energy.
   A. industrial programs
4. The fact is that the reed roof in Europe belongs to the ________ of elite and highly sought-after.
   A. category  
   B. standard  
   C. level  
   D. group

5. So, 1 sq m of the ________ ________ costs 50-60 euros.
   A. reed roof  
   B. thatched roof  
   C. bamboo roof  
   D. rattan roof

6. For a small house with an ________ of 60 sq m it is required to have a reed roof of the area of 300 sq m.
   A. area  
   B. room  
   C. space  
   D. territory

7. So, the house of a ________ ________ _____ ___ becomes a source of pride for its owner.
   A. simple artificial material  
   B. simple natural material  
   C. simple man-made material  
   D. simple synthetic material

8. Reed is a ________ ________.
   A. cosmic material  
   B. universal material  
   C. all-round material  
   D. unique material

9. It is durable in ________.
   A. use  
   B. shape  
   C. form  
   D. quality

10. Natural properties of reeds are those that assist to its durability and ________ – it does not rot.
    A. capability
11. It has a ________ ________, thereby in laying.
A. plain structure
B. tubular structure
C. oval structure
D. round structure

12. Reed is well ventilated, withstands ________ ________.
A. mild temperatures
B. slight temperatures
C. extreme temperatures
D. small temperatures

13. This does not allow moisture to penetrate the ________.
A. overlapping
B. coating
C. flooring
D. ceiling

14. It is a natural protection from the ________ at home.
A. weather
B. nature
C. city
D. industry

15. The surface of the roof of a ________ of reeds is rough.
A. hut
B. tent
C. house
D. villa

16. This delays the ________ cover and serves as additional insulation.
A. wind
B. rain
C. snow
D. frost

17. Reed roofs are long-term of 50-80 ________.
A. days
B. months
C. years
D. centuries
UNIT 19

Well-proven are reed slabs using gypsum. These slabs are so strong, that can withstand loads of up to 230 kg in the middle. However, they are lightweight, easy to work with - shape them the right size – and it does not crumble when you need to file or trim... Rolled-gypsum reed units remain to be low thermal conductive and soundproofing. Houses made of reeds are usually framed. On the ready foundation the frames of specified value are arranged and draped with reed slabs. As a rule, the distance between the frame uprights is 1 m., inside and outside strengthened terminal board obliquely is at an angle of 45*. It is necessary to provide advance protection against the damage to the house of fungus and moisture. For houses made of reeds - handle mats contain 10% solution of copper sulfate or 3% solution of sodium fluoride. However, this is an extra protection. After installing the reed slabs, the surface of walls is plastered. You can use clay-lime or clay-straw mortar. To protect the house of reeds from rodents, the lower part is made of cement plaster.
EXERCISES:

1. Choose the right answer:

1. Well-proven are reed slabs using ________.
   A. clay  
   B. gypsum 
   C. straw 
   D. cement 

2. These slabs are so strong, that can withstand ________ of up to 230 kg in the middle.
   A. weights 
   B. amounts 
   C. numbers 
   D. loads 

3. However, they are lightweight, easy to work with - shape them the right ________ - and it does not crumble when you need to file or trim.
   A. length 
   B. size 
   C. weight 
   D. width 

4. ________ - ________ ________ ________ remain to be low thermal conductive and soundproofing.
   A. Rolled-gypsum reed blocks 
   B. Rolled-gypsum reed slabs 
   C. Rolled-gypsum reed units 
   D. Rolled-gypsum reed items 

5. ________ made of reeds are usually framed.
6. On the ready foundation the frames of specified _______ are arranged and draped with reed slabs.
A. value
B. number
C. shape
D. size

7. As a rule, the distance between the frame uprights is 1 m., _______ _______ _______ strengthen terminal board obliquely is at an angle of 45°. 
A. inside and outside
B. inside and upside
C. upside and down
D. down and out

8. It is necessary to provide advance protection against the damage to the house of _______ _______ _______.
A. fungus and bacteria
B. fungus and moisture
C. bacteria and moisture
D. moisture and steam

9. For houses made of reeds - _______ _______ contain 10% solution of copper sulfate or 3% solution of sodium fluoride.
A. handle carpets
B. handle rugs
C. handle mats
D. handle tapestries

10. However, this is an _______ _______. 
A. extra protection
B. extra shield
C. extra warning
D. extra precaution

11. After installing the reed slabs, the _______ of walls is plastered.
A. surface
B. inside
C. outside
D. filling

12. You can use clay-lime or clay-straw _______.
A. glue  
B. adhesive  
C. paste  
D. mortar  
13. To protect the house of reeds from ________, the lower part is made of cement plaster.  
A. snakes  
B. spiders  
C. ants  
D. rodents  

2. Match the right variants:  

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</tbody>
</table>

3. What can you tell about the houses made of reeds? Try to reproduce the text in your own words.

Read and translate the text.

TEXT 20. Advantages of the houses made of reeds

They are cost-effective, practical. The material is everywhere, harvesting it requires no capital investment. And mastering the skills of construction is not difficult. Reed is an environmentally friendly material. During one year, the plant does not have time to accumulate harmful substances, so it is initially harmless as a building material. It has the ability to withstand strong winds, even a hurricane. Eyewitnesses claim that in 2007 when there were hurricanes in the south of Ukraine and the Crimea no house of reeds was damaged. Although the hurricane was so strong that several ships sank, roofs were ripped off from many other structures and power lines were damaged. In 2002, the same pattern was observed in Europe during the hurricane.
EXERCISES:

1. Choose the right answer:

1. They are cost-effective, ________.
   A. practical
   B. impractical
   C. unpractical
   D. visionary

2. The material is everywhere, ________ it requires no capital investment.
   A. planting
   B. harvesting
   C. watering
   D. thinning

3. And mastering the ________ of construction is not difficult.
   A. skills
   B. occupation
   C. profession
   D. habits

4. Reed is an ________ ________ ________.
   A. environmentally friendly plant
   B. environmentally friendly flower
   C. environmentally friendly tree
   D. environmentally friendly material

5. During one year, the plant does not have ________ to accumulate harmful substances, so it is initially harmless as a building material.
6. It has the ability to withstand ________ ________, even a hurricane.
A. weak winds
B. strong winds
C. strong breezes
D. weak breezes

7. Eyewitnesses claim that in 2007 when there were ________ in the south of Ukraine and the Crimea no house of reeds was damaged.
A. droughts
B. floods
C. hurricanes
D. typhoons

8. Although the hurricane was so strong that several ships sank, ________ were ripped off from many other structures and power lines were damaged.
A. floors
B. structures
C. roofs
D. walls

9. In 2002, the same ________ was observed in Europe during the hurricane.
A. case
B. pattern
C. story
D. scheme

2. **Match the right variants:**

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</table>
3. What can you tell about the houses made of reeds? Try to reproduce the text in your own words.

UNIT 21

Read and translate the text.

TEXT 21. Reed properties

It is water-resistant. It has low thermal conductivity and high insulation characteristics. The thermal conductivity of reeds is 4 times lower than that of wood; 7 times lower than that of brick. No additional heat- and soundproofing installations are needed. Building a house of reeds may take a few weeks. Construction of houses made of reeds is very convenient. Each reed is unique, so there are no two identical houses ... It does not require additional ventilation. Houses of reeds "breathe" and provide natural ventilation. It retains heat in winter and keeps cool in summer. The house needs to "breathe". Nearby trees can shade the house and impede air circulation. This may contribute to the accumulation of moisture, which is unacceptable for the house of reeds. The smaller is the angle, the greater is the probability of occurrence of stagnant areas, which reduces the lifetime of the home. Houses of reeds maintain its environmental properties for a long time, if the thickness of the walls and the roof is at least 30-40 cm. Roof beams and cross rafters must be strong enough, but the frame system of a house should also be strong as a whole. After some time, the house of reeds changes its color (it darkens). To preserve the aesthetic appearance of the house it should be built of reed slabs, otherwise over time the house will look like a patchwork quilt. In the reed house it is cozy, quiet and peaceful. Eco-houses of reeds meet all quality standards and satisfy the needs of the most discerning buyer. Beauty, originality, sophistication – it’s the perfect place to live.
EXERCISES:

1. **Choose the right answer:**

1. It is _________-_________.
   A. air-resistant
   B. water-resistant
   C. moisture-resistant
   D. steam-resistant
2. It has _________ _________ _________and high insulation characteristics.
   A. low thermal conductivity
   B. high thermal conductivity
   C. normal thermal conductivity
   D. average thermal conductivity
3. The thermal conductivity of reeds is 4 times lower than that of ________; 7 times lower than that of brick.
   A. steel
   B. rattan
   C. wood
   D. plastic
4. No additional heat- and soundproofing _________ are needed.
   A. qualities
   B. indices
   C. regulations
   D. installations
5. Building a house of reeds may take a few ________.
   A. weeks
   B. days
   C. months
   D. years
6. _________ of houses made of reeds is very convenient.
   A. Renovation
   B. Construction
   C. Refurbishment
   D. Maintenance
7. Each reed is unique, so there are no two identical ________.
   A. houses
   B. buildings
   C. materials
D. structures
8. It does not require additional _______.
   A. insulation
   B. ventilation
   C. canalization
   D. heating
9. _______ of reeds "breathe" and provide natural ventilation.
   A. Chairs
   B. Tables
   C. Houses
   D. Blinds
10. It retains heat in _______ and keeps cool in summer.
    A. spring
    B. summer
    C. autumn
    D. winter
11. The _______ needs to "breathe".
    A. method
    B. technique
    C. house
    D. skin
12. Nearby _______ can shade the house and impede air circulation.
    A. plants
    B. flowers
    C. bushes
    D. trees
13. This may contribute to the accumulation of _______ , which is unacceptable for
    the house of reeds.
    A. moisture
    B. heat
    C. gas
    D. steam
14. The smaller is the _______ , the greater is the probability of occurrence of
    stagnant areas, which reduces the lifetime of the home.
    A. circle
    B. square
    C. angle
    D. gap
15. Houses of reeds maintain its environmental properties for a long time, if the _______ of the walls and the roof is at least 30-40 cm.
A. weakness
B. load
C. thinness
D. thickness

16. _______ ________ and cross rafters must be strong enough, but the frame system of a house should also be strong as a whole.
A. Roof beams
B. Roof partitions
C. Roof walls
D. Roof floors

17. After some time, the house of reeds changes its _______ (it darkens).
A. structure
B. color
C. architecture
D. composition

18. To preserve the aesthetic appearance of the house it should be built of reed slabs, otherwise over time the house will look like a _______ ________.
A. patchwork jeans
B. patchwork skirt
C. patchwork quilt
D. patchwork dress

19. In the _______ ________ it is cozy, quiet and peaceful.
A. reed house
B. bamboo house
C. rattan house
D. wooden house

20. _______ - _______ of reeds meet all quality standards and satisfy the needs of the most discerning buyer.
A. Eco-plants
B. Eco-houses
C. Eco-stations
D. Eco-factories

21. Beauty, ________, sophistication – it’s the perfect place to live.
A. rusticity
B. simplicity
C. originality
D. austerity
2. *Match the right variants:*  

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3. What can you tell about the reed properties? Try to reproduce the text in your own words.
REFERENCES
7. Electronic dictionary: www.google.com
Навчальне видання

МЕТОДИЧНІ ВКАЗІВКИ
ДЛЯ ОРГАНІЗАЦІЇ САМОСТІЙНОЇ РОБОТИ
з дисципліни
Іноземна мова
(англійська мова)
(для студентів 2 курсу денної форми навчання освітньо-кваліфікаційного рівня бакалавр напряму підготовки «Будівництво»)
«Еко-Будівництво»
(Бамбук, ротанг, сизаль та очерет)

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