

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

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of URBAN ECONOMY in KHARKIV

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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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

Key words: building materials – typically considered – to be – 'green' – to include – lumber – from forests – to be certified to – third-party forest standard – rapidly renewable plant materials – like – bamboo and straw – **dimension stone** – recycled stone – recycled metal - *copper sustainability and recyclability* – other products – non-toxic - reusable – renewable and/or recyclable – for **concrete** – high performance – Roman self-healing concrete – available – EPA (**Environmental Protection Agency**) – also to suggest – using – recycled industrial goods – such as – coal combustion products – foundry sand – demolition debris – in construction projects



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:

building	standard
third-party forest	materials
rapidly renewable plant	straw
bamboo and	materials
dimension	stone
recycled	stone
recycled	recyclability
<i>copper sustainability and</i>	metal
other	performance
high	products
Roman self-healing	Agency
Environmental Protection	concrete
recycled industrial	products
coal combustion	goods
foundry	projects
demolition	sand
construction	debris

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



Read and translate the text.

TEXT 2. Bamboo

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:

Indian	bamboos
large	cane
clumping	genus
most	branches
numerous	species

Southeast	Guinea
New	Asia
Northern	America
other	Territory
various oceanic	regions
Latin	islands

3. What is the second name of bamboo?

4. Try to reproduce the text in your own words.

UNIT 3

Key words: bamboo – as – building material – to be – unique plant – despite – fact – to belong to – family of – bamboo grass – quite easy and hard – wood – uniqueness of bamboo – to lie in – ability – to increase – very rapidly – per day – due to – unpretentiousness – in relation to – conditions of – growth – common – on all continents – except – Antarctica – of course – wide distribution – diversity in use – to make – indispensable material – in many areas of – production – to be used – in construction and decoration of – houses



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 –

bamboo ceilings – to have – original look – unique natural color – beauty of wood – popular decorating material of – many designers – finish – made of – to give – sense of – unity with nature – bamboo products – any room – unique style and uniqueness – ecological purity of – material – to make smb. feel – cheerful and comfortable – in this room – despite – apparent lightness and fragility – to be – quite durable material – solid wood – no wonder – houses of bamboo – popular for some people - in our time - building materials - easy to use – not to require – complex care – to prolong – life and protection – from external influences – sometimes – to be used – lacquered bamboo



Read and translate the text.

TEXT 4. Bamboo (to be continued)

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

popular decorating	beauty
many	materials
unity with	products
bamboo	nature
any	uniqueness
unique style and	room
ecological	fragility
apparent lightness and	purity
durable	bamboo
solid	material
building	care
complex	influences
external	materials
lacquered	wood

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

UNIT 5

Key words: rattan – name for – roughly 600 species of palms – tribe Calameae – Greek – reed – native to – tropical regions of – Africa – Asia – Australasia – most rattans – to differ in (from) – other palms – having – slender stems – diameter – with long internodes – between – leaves – also – not to be – trees – vine-like – scrambling through and over – other vegetation – also to be – superficially similar to – bamboo – unlike – rattan stems – solid – most species – to need – structural support – not to stand – on their own – however – some genera – more like – typical palms – with stouter erect trunks – many rattans – to have – spines – to act as – hooks – to aid – climbing over – other plants – to deter – herbivores – to be known – to grow up – hundreds of metres long – most of – world's rattan population – to exist – in Indonesia – distributed among – Borneo – Sulawesi – Sumbawa islands – rest of – world's supply – to come from – Philippines – Sri Lanka – Malaysia – Bangladesh



Read and translate the text.

TEXT 5. Rattan. Structure

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:

species of	rattans
tropical	palms
most	regions
other	stems
slender	palms

long	scrambling
vine-like	internodes
other	stems
rattan	vegetation
most	support
structural	supply
some	species
typical	genera
stouter erect	palms
many	trunks
other	rattans
world's rattan	plants
Sumbawa	population
world's	islands

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

UNIT 6

Key words: uses – furniture making – rattan chair – generally – raw rattan – to be processed into – several products – to be used in as – materials – furniture-making – various species of rattan – to range from – several millimetres – up to – in diameter – strand of rattan – skin – to be usually peeled off – to be used as – rattan weaving material – remaining "core" of – rattan – various purposes – very good material – mainly – because – lightweight – durable – suitable for – outdoor use – to certain extent – flexible – rattans – to be extensively used for – making – furniture – baskets – when cut into – sections – wood – to make – furniture – rattan – to accept – paints and stains – to like – many other kinds of wood – so – available – in many colours – to be worked into – many styles – moreover – inner core – to be separated and worked into – wicker



Read and translate the text.

TEXT 6. Uses. Furniture-making. A rattan chair

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:

raw	colours
several	species
furniture	core
various	purposes
strand of	making
rattan weaving	"core"
remaining	rattan
various	styles
very good	use
outdoor extent	material
certain	rattan
paints and	material
many other	stains
many	trunks
many	kinds
inner	rattan

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:

popular	pieces
handicraft and art	baskets
rattan	choice
plant	works
other decorative	containers
rattan	umbrellas
high-end	projects
most	areas
rattan rich	natives
sturdy	countries
home building	material
housing	wood
rural	plant
plant or	furniture

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

UNIT 8

Key words: sisal – botanical name – Agave sisalana – to be – species of Agave – native to – southern Mexico – widely cultivated and naturalized – in many other countries – to yield – stiff fibre – used in – making – various products – term – to refer to – either – plant's common name – fibre – depending on – context – to be sometimes referred to as – "sisal hemp" – because – for centuries – hemp – major source for – other fibre sources – to be named after it – sisal fibre – to be traditionally used for – rope and twine – to have – many other uses – including – paper – cloth – wall coverings – carpets – dartboards



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:

botanical	products
southern	countries
many other	uses
stiff	sisal
various	sources
term	fibre
plant's common	source
"sisal	name
major	name
other fibre	hemp"
sisal	twine
rope and	Mexico
many other	coverings
wall	fibre

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

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



Read and translate the text.

TEXT 9. Uses

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 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:

leading	industry
everyday	material
certain	Association
traditional	life
haymaking	products
new higher-valued sisal	dyestuffs
general	strengthening agent
low-cost and specialty	cordage
buffing	paper
wire rope	cloth
environmentally friendly	industry
composite	uses
various	materials
automobile	resistance standards
lower-grade	covering
paper	fibre
high	fibre
medium-grade	cores
cordage	twine
baler and binder	content
higher-grade	techniques
carpet	fibre
sisal wall	industry
abrasion and tearing	and Materials
American Society for Testing	use
National Fire Protection	industry

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

UNIT 10

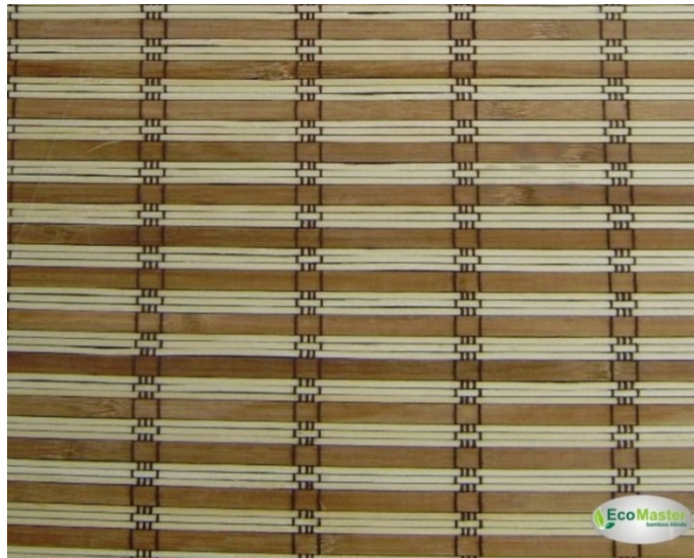
Key words: carpets – despite – yarn durability sisal – to be known for – slight matting – sisal carpeting – to occur in – high-traffic areas – sisal carpet – not to build up – static – to trap – dust – so – vacuuming – to be - only maintenance – required - high-spill areas – to be treated with – fibre sealer – spot removal – drycleaning powder – to be recommended – depending on – climatic conditions – sisal – to absorb – air humidity – to release – causing – expansion – contraction – not to be recommended for – areas – to receive – wet spills – rain or snow – to be used by – itself – in carpets – in blends with wool and acrylic – for softer hand



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:

yarn	matting
slight	durability
sisal	maintenance
high-traffic	areas
sisal	carpet
only	areas
high-spill	conditions
fibre	removal
spot	sealer
drycleaning	spills
climatic	humidity
air	powder
wet	hand
wool and	carpeting
softer	acrylic

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

UNIT 11

Key words: reed or cane – to be – genus of – aquatic grass-like species – in family of – sedges – many with – common names – club-rush – bulrush – other common names – deer-grass or grass-weed – to have – grass-like leaves – clusters of – small spikelets – often – brown – some species – to reach – height of 3 m – while – others – e.g. – much smaller – only reaching – 20–30 cm tall – nearly cosmopolitan distribution – found – on every continent – except – Africa – Antarctica – many species – common – in wetlands – to produce – dense vegetation – along rivers – in coastal deltas – in ponds and potholes – although – flooding – most important factor – affecting – its distribution – drought – ice scour – grazing – fire and salinity – also – to affect – its abundance – to survive – unfavourable conditions – like – prolonged flooding – as – buried seeds – reed or cane species – to be often planted to inhibit – soil erosion – to provide – habitat for – other wildlife



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 _____.

- 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:

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

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

UNIT 12

Key words: to know – metal – to reduce – human bio-field – brick – wood – to be – neutral – on effects of – chemically treated straw – to increase – not treated – of course – skeptical about – these figures – house of natural materials – to give – incomparable warmth and comfort – no one – to deny – these homes – to be called – passive houses – eco-friendly homes – not only to preserve – natural resources – not to pollute – environment – to create – clean space – for humans – maintaining – natural moisture – clean air – sound – optimum temperature – all this – to assist to – health



Read and translate the text.

TEXT 12. Did you know?

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:

human	comfort
incomparable warmth and	bio-field
these	houses

chemically treated	materials
natural	straw
these	figures
passive	homes
eco-friendly	resources
natural	space
clean	homes
natural	temperature
clean	moisture
optimum	air

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

UNIT 13

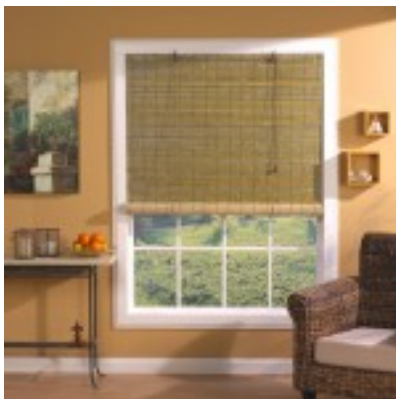
Key words: every year – round – world – growing interest – in homes – to be constructed from – natural materials – statistics – to show – in Europe – homes – to be built from – most common eco-houses – to be – houses – made of – wood – adobe – mud and straw additives – et al – but – more material available – that to be – bulrush – common reed – to grow – in floodplains – along – shores of lakes – marshy places – while – onset of – early frosts – plant – to dry – its leave – to fall – reeds – to remain – upright – here – at this time – when – water – to be covered with – ice – harvests of – reeds – for construction – harvesting – to take place – by hand – machine – to be known – up to – species of reed – five species – to be used – in construction – reeds – must – to be characteristic of – brown-golden color – glossy hard surface – hollow inside – in Ukraine – harvest of reeds – in November and February



Read and translate the text.

TEXT 13. Harvesting

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:

every	material
growing	reed
natural	interest
most common	materials
mud and straw	eco-houses
more	additives
common	places
marshy	surface
early	year
five	frosts
brown-golden	species
glossy hard	color

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

– as well as – pressed cane – as thick as – to have – similar performance – to conserve – heat – as well as – masonry – made (in) – two and a half brick – unique insulation material – possible to use as – insulation – in construction of – low-rise buildings – to speak about – pressed cane firmware – to be carried out – with use of – galvanized wire – to come – in various sizes – thickness – so – everyone – to be able – to choose for oneself – best option- generally – to be going on – for many centuries – its use – possible to carry out – not only – walls – but also – floors – mansard roofs – in addition – boards of cane – to help – to get – good sound insulation



Read and translate the text.

TEXT 14. Reed slabs - 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.
- pressed cane
 - pressed gypsum
 - pressed carton
 - pressed paper
5. A reed slab – is a unique insulation material, which it is possible to use it as insulation in the construction of _____ - _____.
- high-rise buildings
 - low-rise buildings
 - medium-rise buildings
 - skyscraper buildings
6. If we speak about a reed slab, it is pressed cane firmware which was carried out with the use of _____.
- charged wire
 - unpowered wire
 - galvanized wire
 - bare wire
7. Reed slabs come in _____ and thickness, so everyone will be able to choose for themselves the best option.
- various shapes
 - various colours
 - various length
 - 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.
- many months
 - many years
 - many hours
 - many centuries
9. In addition, the boards of cane help to get a _____.
- bad sound insulation
 - good sound insulation
 - poor sound insulation
 - good light insulation

2. Match the right variants:

construction	and safety
many	materials
environmental cleanliness	insulation
effective	slab
reed	material
best and most effective	centuries
pressed	insulation
similar	cane
unique insulation	performance
low-rise	roofs
galvanized	firmware
various sizes and	option
best	wire
many	reasons
mansard	insulation
good sound	thickness
buried	species
reed or cane	flooding
soil	seeds

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

UNIT 15

Key words: slabs – made of – reeds – to have – following advantage – excellent moisture resistance – to be manifested – when – wet slab – to dry – fairly quickly – without losing – its shape – physical properties – no possibility – existence of – insects and rodents – inability – to discharge – toxic substances – easy to use – use of reed slabs – during construction – during repair – to help – to create – unique microclimate – house – to be – in process of nature itself – to explain – popularity of – not only – in Russia – but also – worldwide – cane material – to be used – in pavilions – roof tent – roofed huts – bungalows – as – lining of – walls – bar – stationary tents for trade – so on – especially important – near – sea or river – generally close to – various bodies of water – lining material of reed or cane – to give

- beautiful attractive appearance – to bring – cool – on hot summer day – main thing
- right approach to – roof – made of – reeds or cane



Read and translate the text.

TEXT 15. Unique microclimate

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:

following	properties
excellent moisture	advantage
wet slab	insulation
physical	resistance
toxic	slabs
reed	approach
unique	material
cane	tent
roof	microclimate
roofed	roofs
stationary	tents
various bodies of	substances
beautiful attractive	thing
hot summer	water
main	day
right	appearance

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

UNIT 16

Key words: while construction – roof – made of – reed or cane – hardest part – to be – subsystem – so to speak – roof girder – to be quite simple – ready-made girder sheathe – using reeds – owner – thanks to – finish of – in return – to receive – presentable gazebo – all – to need – to pick – dry reed shoots – to put – stack – head to head – to cut off – soft tops – two ways – to lay on – first method – to knit – bundles of – on roof – second – just – to plank reed – cane – straw – beams tally – not too tight – tacks – quite enough for – entire length of – beam – in some places – to be made – potholders – in other places – to be screwed – mounting – for installation – to take – ordinary screws and nails – then – important – not to forget – gasket or engraver – to put – before – to be screwed – to be easily done with – stapler – in places – linking – beams – simply – to lay – straw or cane – with one long thread – to fix – entire length of – structure – to break through – by means of – to fasten – string – opportunity for – with help of – ordinary wooden planks – such as – crates – under – hydro-polyethylene – extra protection from – rain – to large extent – these measures – necessary – of course – to have – private house – experience to show – if – air humidity – to be retained – for reed and wood – flame retardant treatment – to be required



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:

hardest	girder
roof	part
girder	method
presentable	places
dry reed	tops
soft	shoots
two	places
first	sheathe
beams	length
entire	tally
some	extent
other	gazebo
ordinary screws and	planks
long	nails
ordinary wooden	protection
extra	thread
large	house
these	ways
private	measures
flame retardant	humidity
air	treatment

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

of – eco-houses – made of – reeds – to be improved – for example – manufacturing companies – to offer – complete reed slabs – with definite strapping – in this case – eco-reed mounted frame – with reinforced concrete – to be plastered – while manufactured – using – in construction of eco-reed – significant for – cost saving timber



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:

high	hours
heavy	cover
reed	bundles
few	building material
reed	beams
these	downpours
wooden	slabs
special	humidity
reed	machines
wooden	slabs
knit reed	material
building	uprights
manufacturing	mounted frame
complete	reed slabs
definite	companies
this	strapping
eco-reed	case
these	ways
reinforced concrete	timber
cost saving	slabs

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

UNIT 18

Key words: in Europe – reed roof – to become popular – years ago – interest in – not to weaken – over time – modern West – to be focused on – use of – clean and safe building materials – all over – world – government programs – to support – environmentally friendly raw materials – in industry – construction – energy – fact – to be – reed roof – to belong to – category of – elite – highly sought-after – so – thatched roof – to cost – euros – small house – area of sq m – to be required – reed roof – area of – so – house of – simple natural material – to become – source of pride for – its owner – reed – to be – unique material – durable in use – natural properties of reeds – to assist to – its durability and reliability – not to rot – to have – tubular structure – thereby – in laying – to be well ventilated – to withstand – extreme temperatures – not to allow – moisture – to penetrate – coating – natural protection from – weather – at home – surface of – reeds – to be rough – to delay – snow cover – to serve as – additional insulation – long-term – of years



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

- B. engineering programs
- C. ecological programs
- D. government 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

- B. ability
 - C. inability
 - D. reliability
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

2. Match the right variants:

reed	building materials
years	protection
modern	roof
government	house
environmentally friendly	programs
thatched	raw materials
small	West
required reed roof	material
simple natural	roof
unique	area
natural	material
tubular	properties
extreme	structure
natural	temperatures
snow	insulation
additional	ago

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

UNIT 19

Key words: well-proven – reed slabs – using – gypsum – these slabs – so - strong – to withstand – loads of – up to – in middle – however – lightweight – easy to work with – to shape – right size – not to crumble – when – to need – to file or trim – rolled-gypsum reed units – to remain – to be low – thermal conductive – soundproofing – houses – made of – reeds – to be usually framed – on ready foundation – frames of specified value – to be arranged and draped with – reed mats – slabs – as – rule - distance – between – frame uprights – inside and outside – strengthened terminal board – obliquely – at angle of – necessary – to provide – advance protection – against – damage to – house – fungus – moisture – for houses made of – handle mats – to contain – solution of – copper sulfate – sodium fluoride – however – extra protection – after installing – mats – surface of walls – to be plastered – to use – clay-lime – clay-straw mortar – to protect from – house of reeds – rodents – lower part – to be made of – cement plaster



Read and translate the text.

TEXT 19. Reed slabs with the use of gypsum

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.

A. Flats

B. Rooms

C. Corners

D. Houses

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:

reed	size
right	slabs
rolled-gypsum reed	soundproofing
low thermal conductive and	value
ready	units
specified	foundation
frame uprights	outside
inside and	mortar
strengthened terminal	protection
advance	part
fungus and	board
handle	uprights
copper	fluoride
sodium	sulfate
extra	mats
clay-lime or clay-straw	protection
lower	plaster
cement	moisture

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

UNIT 20

Key words: advantages – house of reeds – to be – cost-effective – practical material – everywhere – harvesting – to require – no capital investment – mastering – skills of construction – not difficult – reed – environmentally friendly material – during – one year – plant – not to have time – to accumulate – harmful substances – so – initially harmless – as – building material – to have – ability – to withstand – strong winds – even – hurricane - eyewitnesses – to claim – when - hurricanes – in south of – Ukraine – Crimea – no house of reeds – to be damaged – although – hurricane – so strong – to sink – several ships – roof – ripped off roofs – many other structures – to damage – power lines – same pattern – to be observed – in Europe – during – hurricane



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.

- A. place
- B. space
- C. time
- D. field

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:

capital	lines
environmentally friendly	substances
harmful	material
building	structures
strong	ships
several	winds
many other	investment
power	pattern
same	material

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

UNIT 21

Key words: to be – water-resistant – to have – low thermal conductivity – high insulation characteristics – thermal conductivity of reeds – 4 times lower than – wood – brick – no additional heat – and soundproofing installations – to be needed – building – house of reeds – to take – few weeks – construction of houses – made of – reeds – very convenient – each reed – unique – so – no two identical houses – not to require – additional ventilation – to "breathe" – to provide – natural ventilation – to retain – heat – in winter – to keep – cool – in summer – to need – to "breathe" – nearby trees – to shade – to impede – air circulation – to contribute to – accumulation of moisture – to be unacceptable for – smaller – angle – greater – probability of – occurrence of – stagnant areas – to reduce – lifetime of – home – to maintain – its environmental properties – long time – thickness of – walls – roof – at least 30-40 cm – roof beams and cross rafters – must – strong enough – frame system – after some time – to change – its color – to darken – to preserve – aesthetic appearance – should – to be built – reed slabs – otherwise – over time – to look like – patchwork quilt – reed house – cozy – quiet and peaceful – eco-houses of reeds – to meet all quality standards – to satisfy needs of – most discerning buyer – beauty – originality – sophistication – perfect place – to live



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:

low thermal	characteristics
high insulation	conductivity
thermal	installations
additional heat- and soundproofing	conductivity
each	ventilation
no two identical	trees
additional	reed
natural	houses
nearby	ventilation
air	areas
stagnant	circulation
its environmental	system
roof	properties
cross	beams
frame	rafters
aesthetic	quilt
reed	standards
patchwork	appearance
reed	buyer
quality	slabs
most discerning	place
perfect	house

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

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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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