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FACULTY OF FORESTRY AND ENVIRONMENT
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EDUCATION ADMINISTRATION IMPLEMENTING
COMMISSION

ODD SEMESTER ONLINE FINAL EXAM 2021/2022

Subject	:	Agroforestry (SVK427	Question Maker	:	Dr. Irdika Mansur
Date and time	:	Wednesday, 8 Dec 2021			
Time	:	10.00-12.00 WIB (time limit 60 minutes)	PJ Online	:	Dr. Adisti PP Hartoyo
Room	:	newlms			

A. Choose the most correct answer by circling the letter in front of it! (total score 40)

1. The characteristics of tropical soil, among others, except: (LO 8)
  a. Low fertility c. High acidity
  b. Slow decomposition of organic matter d. Low rhizobium population

2. Artificial ecosystems that have a relatively closed nutrient cycle are: (LO 8)
  a. Plantation forest c. Oil palm plantation
  b. natural forest d. Agroforestry

3. Land use systems that can maintain soil fertility and land productivity in the tropics are: (LO 8)
  a. Plantation forest c. Oil palm plantation
  b. natural forest d. Agroforestry

4. Positive effects of trees on soil include, except: (LO 9)
  a. Reduce wind speed c. Nitrogen fixation
  b. Nutritional return d. Reduce *leaching*

5. The negative effects of trees in agroforestry include, except: (LO 9)
  a. Shade the lower plants c. Reduces surface run off rate
  b. Elemental competition d. Water competition

6. The definition of the nutrient cycle is the transfer of nutrients as follows: (LO 9)
  a. land-plant-soil c. plant-land-plant
  b. air-soil-plantsan d. soil-air-plant

7. The following groups of elements include primary nutrients: (LO 9)
a. Ca, K, P   c. Mg, N, P
b. N, P, K   d. Ca, N, Mg

8. Effects of agroforestry systems on nutrient cycles, including: (LO 10)
a. increase in harac capture power.   c. increased N . fixation
b. soil conservationd.   d. everything is correct

9. One of the significant nutrient inputs in the agroforestry system is derived from: (LO 9)
a. inorganic fertilizerc.   c. organic matter decomposition
b. source rock mineralization   d. rainwater

10. Nitrogen fixation from the air is carried out by a symbiosis between: (LO 9)
a. legumes with Frankia   c. legumes with mycorrhizae
b. Alnus with rhizobiumd.   d. legumes with rhizobium

11. BOT materials in agroforestry systems come mainly from, except: (LO 9)
a. cow dung   c. crop
b. litter   d. root residue

12. The role of trees in agroforestry systems on BOT: (LO 9)
a. biomass provider   c. Reduce BOT loss
b. Reduces decomposition rate   d. all answers are correct

13. Litter is said to be of low quality if: (LO 9)
a. high lignin content   c. C/N ratio high
b. slow decomposition rate   d. All answers are correct

14. The leaves of the tree species below have the highest nutrient content of N, P, and K: (LO 9)
a. Gamal   c. teak
b. Jabond   d. Venus

15. The root function for the tree is, except: (LO 8)
a. absorb harac   c. strengthen the tree
b. absorb water   d. prevent erosion

16. Nitrogen fixation: (LO 10)
a. performed by the legume tree   c. made by mushroom
b. made by bacteria   d. everything is correct

17. Examples of essential oil-producing tree species, except: (LO 10)
a. remember   c. duabanga
b. eucalyptus   d. agarwood

18. OFR stands for: (LO 10)
    a. On Farm Reservation   c. On Farm Research
    b. One Farm Research   d. On Farming Researches

19. Silvopasture is a form of agroforestry that combines tree planting with: (LO 11)
    a. dairy cattle   c. elephant grass
    b. sheep effort   d. all answers are correct

20. A business is declared feasible if: (LO 11)
    a. NPV < 1   c. IRR = bank interest
    b. BCR > 0   d. BCR > 1

B. Circle the letter B if the statement is true and the letter S if the statement is false! (total score 40)

1. B– S   Agroforestry systems can stabilize soil aggregates. (LO 8)

2. B –S   USLE stands for Uniform Soil Loss Equation. (LO 8)

3. B– S   Types of saninten trees (*Castanopsis argentea*) is a type of timber and non-timber producing trees that are suitable to be used as main trees in agroforestry on lands with an altitude above sea level of more than 500 dpl. (LO 9)

4. B –S   In the agroforestry system, it is recommended to plant trees closely spaced so that erosion can be reduced quickly. (LO 8)

5. B– S   Sengon is an important tree species for agroforestry because apart from its sparse canopy, it is also capable of symbiotic relationship with rhizobium to fix nitrogen. (LO 9)

6. B– S   The advantage of jabon compared to sengon when used as a species for agroforestry is because the shape of the stem does not change even though it is planted with a wide distance. (LO 9)

7. B –S   The half-life of organic matter decomposition in the tropics is longer than in the sub-tropics. (LO 10)

8. B –S   Lamtoro leaves will decompose faster than gamal leaves. (LO 9)

9. B –S   Litter produced by trees will increase soil erodibility. (LO 9)

10. B– S   The presence of trees in an agroforestry system can change the microclimate that hinders the performance of microbial decomposers. (LO 8)

11. B– S   The alley planting system is the same as the system *alley cropping*. (LO 11)

12. B –S   The crop strip system is a cropping system that surrounds a single row garden as a garden boundary.(LO 11)

13. B– S   Calyptus is a type of tree that can be used as a wind protection tree. (LO 9)

14. B –S   The features within D&D that matter are Rigidity, Speed, and Repeatability. (LO 10)

15. B –S   OFR is a response to realize the interests of researchers in the process of technology regeneration. (LO 10)

16. B– S   The objective and basis of the OFR experiment is to estimate the impact of farmer capabilities and management on the impact of technology (LO 13)

17. B– S   The key to the success of agroforestry is the application of multidisciplinary knowledge. (LO 14)

18. B –S   NPV as an agroforestry business feasibility parameter stands for Net Performance Value. (LO 12)

19. B– S   Silvopastura is a form of agroforestry that combines tree planting with animal husbandry. (LO 14)

20. B– S   Agroforestry that combines tree planting with medicinal plants is called agrosilvomedika. (LO 14)

C.   Answer the following questions briefly and clearly! (value 20)

1.   Explain why agroforestry systems are believed to be land use patterns that can maintain soil fertility and productivity compared to conventional agriculture? (LO 8)

2.   In relation to agroforestry courses, if your parents owned 10 ha of land, would you suggest to your parents to practice agroforestry on their land? Why? What kind of agroforestry? What types of trees and plants do you recommend? Why? (LO 13)