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BIOLOGY WORK SHEET FOR GRADE 12 (Ecology)

Choose the correct answer from the given alternatives

1. Which component of soil fertility is improved when farmers grow legumes in crop rotation?
A. Phosphorus B. Nitrogen C. Sulfur D. Carbon
2. One of the following biomes in Africa is supporting large wild mammals such as elephants, giraffes and lions.
A. The Congo Rainforest C. The Rain Forest of Western Ethiopia
B. The Savanna Grassland D. The Sahara Desert
3. In which one of the following aspects is the tropical rainforest biome poor?
A. Species diversity B. Amount of sunlight C. Annual precipitation D. Soil fertility
4. Which of the following is NOT usually true as an ecological succession progresses to advanced seral stages?
A. More ecological niches are formed C. Species become more diverse
B. The depth of the soil increases D. Less populations are supported
5. In which one of the four phases of population growth is the number of the population the highest?
A. Lag phase B. Log Phase C. Constant phase D. Decline phase
6. What is the type of community called when it has reached the final and most complex stage of a succession?
A. Pioneer Community B. Seral Community C. Climax Community D. Secondary Community
7. Which of the following is an ecosystem?
A. A Tropical Rainforest C. The African continent
B. All the organisms in a given area D. The non-living components of an environment
8. What is the main reason for the high species richness of plants and mammals observed in Ethiopia?
A. Lack of predators C. Efficient management of the ecological resources
B. Lack of disturbance D. Presence of several biomes within the country
9. Which one of the following concepts contains all the others?
A. Species B. Genus C. Population D. Community
10. If the age pyramid of a certain country is narrowing at the base, what does this tell about the trend of the population size of the country? The population size is:
A. declining B. growing fast C. increasing slowly D. stabilising.
11. Which of the following parts of plant roots is harbouring nitrogen fixing bacteria?
A. Root nodule B. Root hair C. Root tip D. Root cap
12. Which of the following forms of nitrogen is readily utilizable by green plants?
A. Atmospheric nitrogen B. Nitrite C. Ammonium ion D. Nitrate
13. In which one of the following ways the Tundra biome differs from desert biome?
A. It is a treeless biome C. It has little biodiversity
B. It receives little precipitation D. It has permanently frozen subsoil
14. In Ethiopia, which one of the following Vertebrate groups has largest number of genera?
A. Mammals B. Birds C. Reptiles D. Amphibians

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15. In which of the following ways is the carbon dioxide of the atmosphere fixed into the carbon found in organic molecules?
- A. In the breathing processes of all animals
 - B. In the decomposition of organic molecules
 - C. In the process of photosynthesis by green plants
 - D. In all the cellular respiration processes of organisms
16. Which of the following resources is needed by an ecosystem from outside in order to sustain itself?
- A. Producers B. Macronutrients C. Micronutrients D. Sunlight
17. Which of the following applies to the tropical rainforest?
- A. Low rainfall and high temperature C. Low rainfall and low temperature
 - B. High rainfall and high temperature D. High rainfall and low temperature
18. Which term describes the process by which water is lost by evaporating through the stomata of leaves?
- A. Transport B. Transpiration C. Anchorage D. Adhesion
18. Suppose sites A, B, C and D have Simpson's Index of Diversity (d). Values of 20, 8, 16 and 3, respectively, which site is dominated by one or just a few species?
- A. Site A B. Site B C. Site C D. Site D
19. Which of the following can create strong inter-species competition if shared by two or more species?
- A. Habitat B. Ecosystem C. Niche D. Predator
20. Among the following, which one has little or no contribution to the loss of biodiversity?
- A. Overgrazing by domestic animals C. Clearing forests to grow crops
 - B. Growing crops of improved varieties D. Growing crops of landrace
21. What is the ecological succession in which plant communities establish after an area has been completely demolished by fire?
- A. Tree succession B. Secondary succession C. Primary succession D. Bare rock succession
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23. In the carbon cycle, which of the following processes removes carbon dioxide from the atmosphere?
- A. Respiration B. Decomposition C. Combustion D. Photosynthesis
24. What are the possible consequences of deforestation of the tropical rainforest?
- A. An increase in existing ecological niches C. Reduction in species diversity of an area
 - B. Increased removal of CO₂ from the atmosphere D. An increase in the amount of nitrogen in the soil
25. Which of the following processes releases CO₂ into the atmosphere?
- A. Respiration B. Assimilation C. Feeding D. Photosynthesis
26. If an area is dominated by just one species having Very many individuals, what would be its index of diversity?
- A. Fluctuating B. High C. Low D. Unpredictable
27. Which of the following organic compounds would release both nitrogen and sulfur to the ecosystem when decomposed?
- A. Polysaccharides B. Sucrose C. Proteins D. Lipids

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28. Among the vertebrates found in Ethiopia, which class has the highest percentage of endemic species?
A. Amphibians B. Reptiles C. Birds D. Mammals
29. Which of the following terms refers to the movement of individuals out of a population?
A. Mortality B. Immigration C. Emigration D. Natality
30. In Ethiopian animal diversity, which group is represented by the highest number of orders, families, generation and species?
A. Birds B. Amphibians C. Fish D. Mammals
31. Which of the following processes involved in the water cycle is carried out by green plants?
A. Evaporation B. Precipitation C. Condensation D. Transpiration
32. In which biome are epiphytes typically present as a characteristic element?
A. Tropical montane forests C. Cold desert woodlands
B. The Tundra environment D. Boreal deciduous forests
33. Which of the following is an important way by which green plants mitigate the greenhouse effect?
A. Use of fire wood to replace coal C. Removing CO₂ from the atmosphere
B. Releasing water to the atmosphere D. Releasing oxygen to the atmosphere
34. Which group of organisms in the ecosystem release nutrients locked up in dead bodies of organisms?
A. Parasites B. Decomposers C. Autotrophs D. Carnivores
35. Which group of animals has the highest numbers of total and endemic species in Ethiopia?
A. Amphibians B. Birds C. Mammals D. Reptiles
36. Which one of the following crops has its centre of origin and diversity in Ethiopia has become a leading international commodity of commerce?
A. Teff B. Enset C. Coffee D. Anchote
37. Which of the following is NOT the correct characteristic of tropical rainforests?
A. Low biodiversity B. High temperature
C. Heavy precipitation D. Trees of different heights
38. Which one of the following processes has a decreasing effect on the concentration of atmospheric carbon dioxide?
A. Cellular respiration C. Combustion of fossil fuels
B. Decomposition of dead organisms D. Photosynthesis
39. What is the long term primary effect of the current tree planting activities that Ethiopia is undertaking?
A. It will protect from harmful solar rays. C. It will increase the global temperature.
B. It will reduce the atmospheric CO₂. D. It will mend the holes in the ozone layer.
40. From where do plants get most of their nutrients?
A. Chlorophyll B. Soil C. Light D. Atmosphere
41. Which one of the following shows the feeding method of decomposers?
A. Saprobiotic nutrition B. Autotrophic nutrition
C. Parasitic nutrition D. Intracellular digestion
42. What happens when the carrying capacity of an ecosystem is reached?
A. Excretory product accumulates and population numbers increase.

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- B. Population numbers decline rapidly.
C. Population numbers remain more or less constant.
D. Resources are plentiful and populations shoot up.
43. Which one the following is a biotic factor operating within an ecosystem?
A. The amount of helium gas in the air C. The rate of flow of water in a river
B. The carnivores that consume other animals D. The type of climate in a given region
44. The following are Simpson's index of species diversity calculated for four areas containing the same types of species. Which index value is from the area dominated relatively by a fewer number of species?
A. 8.00 B. 6.00 C. 3.5 D. 2.5
45. Which of the following is NOT a tree characteristic of the populations of most the developing countries of the world?
A. High fertility rate C. Increasing population size
B. More number of old people than young people D. Birth rate greater than mortality rate
46. Which of the following is NOT true about C4 plants such as tef (*Eragrostis tef*)?
A. CO₂ is harvested during the night tire
B. The bundle sheath cells contain chloroplasts.
C. Light-dependent reaction occurs in mesophyll cells.
D. Chloroplasts of bundle sheath cells lack thylakoids.
47. What is the reason that plants do not use nitrogen directly from the atmosphere?
A. Nitrogen concentration is low in the atmosphere.
B. The molecular size of nitrogen is too large to pass through the stomata
C. Nitrogen can enter plants only through the root hairs.
D. Plants lack the necessary process to use elementary nitrogen.
48. Which of the following biomes of the Earth has the greatest diversity of species?
A. Deciduous forest B. Tropical rain forest C. Desert D. Tundra
49. What do we call the place where organisms live in their ecosystem?
A. Abiotic B. Biotic C. Habitat D. Niche
50. Which of the following is not recycled in the ecosystem?
A. Sulphur B. Energy C. Carbon D. Phosphorus
51. Which of the following is the type of ecological succession that starts from a cleared forest area?
A. Hydro sere B. Primary C. Secondary D. Pioneer
52. Which of the following is the major role played by bacteria and fungi in the ecosystem?
A. Causing disease B. Nutrient recycling C. Fixing carbon dioxide D. Producing antibiotics
53. Among the following, which one is responsible for the present fast depletion of the world biodiversity?
A. Herbivores B. Carnivores C. Grazers D. Humans
54. Which of the following demographic factors can increase the size of the world population?
A. Natalty B. Mortality C. Emigration D. Immigration
55. The practice of modern agricultural that reduce crop biodiversity is:
A. Overgrazing C. Forest clearing
B. Growing few high yielding varieties D. Growing landraces
56. Why do microorganisms decompose dead organic matters?

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- A. To release mineral nutrients for the plants C. To drive energy for their own use
B. To clean up the ecosystem D. To keep the balance of atmosphere
57. In ecological context, which of the following is a population?
A. All living organisms in a habitat B. All individuals of same species in a habitat
B. All the producers in habitat D. All the decomposers in a habitat
58. Through which of the following processes do all living organisms contribute to carbon cycle?
A. Photosynthesis B. Decomposition C. Cellular respiration D. Combustion
59. Which of the following is not true about the flow of energy in the ecosystem?
A. It is recycled by decomposers C. It passes from one trophic level to the next
B. It enters the ecosystem in the form of light D. It leaves the ecosystem in the form heat
60. Of the following activities, which one is considered to have an indirect negative effect on biodiversity?
A. Charcoal production and illegal logging C. Deforestation for cultivating and urbanization
B. Human and livestock of population D. Monoculture farming with improved crop variation
61. In population growth curve, which phase is affected by lack of nutrients, disease & accumulation of toxic products.
A. lag phase B. log phase C. stationary phase D. decline phase
62. Which one is different from the other?
A. predation B. disease C. Intra-specific competition D. Temperature
- 63 Only people with two or fewer children` may serve in local government. This is the experience of
A. China B. India C. Iran D. Ethiopian
64. One cannot be a good reasons for Ethiopia to be an important regional centre of biological diversity
A. the existence of isolated high lands C. the existence of different low lands
B. the existence of different biomes D. the existence of different climate
65. The biome characterized by adequate rain, poor rocky soil & conifers plant is;
A. tundra B. taiga/boreal forest C. temperate deciduous forest D. tropical montane forest
66. The step in the nitrogen cycle where plants take up nitrate and use it to make biological molecule is?
A. nitrification B. ammonification C. assimilation D. denitrification
67. In intra specific competition of populations.
A. members of different species compete for a resource
B. Usually leads to local extinction of the weakest.
C. members of the same species compete for a resource
D. Under use of the resource leads to population crash
68. What is the population growth phase of the current world population?
A. Static phase B. lag phase C. Decline phase D. Exponential phase
69. Large geographical regions with their specific flora and fauna is called
A. biosphere B. ecosystem C. biomes D. ecology
70. What is the biome of the world where succulent plants are commonly found?
A. Deciduous forests B. Thorn forests C. Hot deserts D. Temperate grasslands
71. If you were to travel from the Arctic Circle to the Equator, what sequence of biomes would you most likely pass through?
A. Tundra, taiga, temperate forest, tropical rain forest
B. Taiga, tundra, temperate forest, tropical rain forest

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- C. tropical rain forest, temperate forest, taiga, tundra,
- D. Tundra, temperate forest, taiga, tropical rain forest

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