

**Remember that final exam format is 20 short answer (2-5 sentences) questions. Topics not covered in the list below will be not included in the final exam. However, questions will be NOT TAKEN VERBATIM. Use the list below as a study guide, instead of memorizing the answers.**

Question/ Answer		Response
1	Q: What are the disadvantages of commercial production in the boreal forest? A: Some disadvantages for commercial production is low growth rates, inhospitable climates, difficult access to many parts of the forest, as well relatively low merchantable volumes per hectare. Also due to ground conditions it limits access and harvesting for long period of times.	OK
2	Question= What are the advantages of using engineered wood versus solid wood? Answer= Engineered wood is more reliable because it is made out of two or more layers of wood glued together. Because of those layers, it is more resistant, therefore, engineered wood does not shrink, expand, or bend. Because it is made out of layers, smaller trees can be used and it is still possible to have wood products with larger dimensions.	OK
3	Q: Name three forest goods and three forest services. A: Some forest goods include timber, pulp, and berries. Some forest services include recreational activities, soil management, and regulation of water flow.	Question does not follow assignment criteria, but topic may be included in the final exam.
4	Question: What are the main biological issues in Canadian Forestry? Provide an example. Answer: The main biological issues in Canadian forestry are insects, disease, fire, and animals. Some examples would be the Mountain Pine Beetle (insect), white pine blister rust (disease), man made forest fires (fire), and endangered species like the Woodland caribou (animals).	OK
5	Q: What is the difference between solid wood products and engineered products and what are the benefits of engineered wood products? A: Solid wood products have been created by the same tree, creating one large piece of solid wood. While Engineered wood products are smaller pieces of wood, from different trees that are glued together. Engineered wood products are more reliable, have higher strength ratings, larger dimensions are possible and smaller trees can be utilized.	OK
6	What environmental and Development of Conservation does China face? There are many environmental challenges that China face including, air pollution, forested dieback, erosion of soil, water pollution, flooding, excessive pesticide use, desertification and rural depopulation. One of the biggest challenges are overexploitation of particular species, which consists of plants in China. The overexploitation is because plants are used for traditional Chinese medicine.	Question is incomplete, but topic may be included in the final exam.
7	What biome is the most diverse species and structure wise and why? The tropical rainforest is the most biologically diverse. This is because of the less stressful, more habitable environment.	OK
8	List and describe the four trophic levels Level 1 is when plants and	Question does not follow

	algae make their own food and are called primary producers. Level 2 is when herbivores eat plants and are called primary consumers. Level 3 is when carnivores, which eat herbivores, are called secondary consumers. Level 4 is when carnivores, which eat other carnivores, are called tertiary consumers.	assignment criteria, but topic may be included in the final exam.
9	What is principles of conservation? 1.the use of existing natural resources for the benefit of the present. 2. Conservation stands for the prevention of waste. 3. The natural resources must be developed and preserved for the benefit of the many, and not merely for the profit of a few.	Answer is incomplete, but topic may be included in the final exam.
10	Are stands in boreal forest zones generally evenly aged? Explain your answer in one way. Stands are generally evenly aged in boreal forest zones. This is because natural disturbances, such as wildfires, clear entire stands at once. When growth occurs in these cleared regions, stands grow together.	OK
11	What is the main trigger for forest destruction in B.C? The main destruction of B.C forest is due to natural disturbances. We had problems with the Mountain Pine Beetles killing of a good portion of our forest. Forest fire is another disturbance that B.C faces where many organisms are killed and lose habitats.	OK
12	What is an ecosystem services approach, and its four categories? Ecosystem services are the benefits humans receive from a functioning ecosystem. They are categorized into four groups provisioning, regulating, supporting, and cultural services. Provisioning services would be the production of food, and water. Regulating services include control of the climate and disease. Supporting services can be the nutrient cycle and soil formation. Cultural examples include aesthetics and spiritual properties of the ecosystem.	OK
13	Question: What are the two schools of valuing nature? What do they mean respectively? Answer: The two schools of valuing nature are Biocentric and Anthropocentric. Biocentric value means regarding nature as if it has its intrinsic value. Anthropocentric value means regarding nature as if it only has its value if human assigned the value.	OK
14	What is a tree? A tree is a perennial woody plant with an elongated stem, or trunk, and supporting branches and leaves (in most species). Additionally, trees are woody plants with secondary growth and are generally larger than 6 meters.	OK
15	Where are Tropical rainforests located? Describe the temperature, rainfall patterns, and how diverse they are. Tropical rainforests are located at the equator in places such as Southeast Asia, West Africa, and upper South America. Temperature and rainfall vary little throughout the year. They are the most complex biome in terms of species diversity.	Answer is incomplete, but topic may be included in the final exam.
16	What is the goal of Silviculture? And what are the main issues with it? The main goal of Silviculture is to produce goods and services from	OK

	the forest that the landowner and society desire. The largest problem with it is getting landowners and general society to define and prioritize various uses of the forest.	
17	Question: How does climate impact a trees growth? Answer: Across the globe climate is the influencer that causes differentiation in tree type. The conditions a tree is put in by the climate in the area defines that trees requirements for survival. Certain trees are more tolerant to cold, harsh winters which roots systems can firmly set in the hard soils, and today these trees are found in places like Canada and Russia.	OK
18	Q: Explain what the goal of silviculture is and how does silviculture achieve this goal? A: Silviculture's goal is to produced the needed goods and services for the landowner and the general society. The ways in which silviculture achieves the production of goods this is though controlling, protecting and restocking the stand. By controlling the stand's structure, density, rotation length and composition, nature grows as efficient as possible. By protecting the stand from insects, diseases and fires, it reduces the amount of damage and loss to the area. Lastly, by restocking the dead or harvested wood with new saplings, it conserves the productivity of the site.	OK
19	Question: What type of forest management has Nepal most recently adopted? How has that approach socially benefited or affected the Nepalese? Answer: Forests are managed by communities. This approach has worked to benefit its citizens by (1) empowering disadvantage groups (such as those who are underprivileged, of lower castes, or are women), (2) granting greater autonomy for communities to decide resource use and management (that must approve through an operation plan by the state).	OK
20	What are forest ecosystem services worth ? • It is essential to assign an economic value to ecosystem services. • A specific market is necessary.	Question is incomplete, but topic may be included in the final exam.
21	What is urban forestry and what are their key characteristics. Urban forestry is the art, science, and technology of maintaining trees. The five key characteristics are Integrative, Strategic, Inter-/multidisciplinary, Participatory, and Urban.	OK
22	Q: What is a stand and how can we improve the stand structure? A: A Stand is a contiguous group of trees sufficiently uniform in species composition, arrangement of age classes, site quality, and condition to be a distinguishable unit. We can improve the stand structure through weeding and Thinning.	OK
23	Which one type of forests of the world has low growth rates (1-1.5m <sup>3</sup> /ha/annum)? Why does it have the low growth rates? Boreal forests have low growth rates. It is because the precipitation is low and mostly snow. Also, it has long severe winters and short cool summers.	OK

24	<p>What are the two values of nature and how do they differ? The two values of nature are anthropocentrism and biocentrism. Anthropocentrism essentially means “human-centred”; it considers human rights to be the most important or superior to anything else and argues that all decisions regarding the environment should be made to benefit humans. Biocentrism is the view that nature has intrinsic value and does not exist to satisfy human needs who do not hold superior rights or values; instead it considers humans to be one of many equal species in one large ecosystem with their own individual benefits.</p>	OK
25	<p>Question: Why do European forests have less biodiversity than North American ones? Answer: The mountain ranges in Europe and North America run east to west and north to south, respectively. During a past ice age, glaciers expanded south on both these continents, pushing against or alongside these ranges. Because of the glaciers in Europe ‘hitting’ the mountains, the seeds carried by the ice were effectively blocked from being transplanted in southern Europe, but in the U.S. and Canada, the mountains did not hinder the ice’s transportation of seeds from farther north. This means that tree species were moved south smoothly in North America while Europe’s trees were stopped at the ranges. The seeds were not successfully planted by the mountains, and European forests’ biodiversities below these ranges are now lacking in quality compared to North America.</p>	Answer is partially correct, but topic may be included in the final exam.
26	<p>What are the priorities for energy? The main priorities for energy are mainly respiration, which is the release of energy, and photosynthesis. It is also responsible for primary growth, secondary growth and compounds. Energy is also needed for reproduction.</p>	OK
27	<p>What are factors leading to deforestation in the Amazon? First the clearing forest as the purpose for mining , agriculture, and infrastructural development. Second reason is logging exploitation which is caused by the increasing needs from the housing market and increasing demand of timber. Third, over slash and burning of the forest also is another reason for rapid deforestation. Overall, these three factors which lead to the deforestation of the Amazon may all be considered as the result of over needs from human being.</p>	OK
28	<p>Q: Do tropical rainforests cleared of vegetation regain their original structure and composition? Why or why not? A: No tropical rainforests do not regenerate easily and do not regain their original structure and composition. This is because nutrients are leached from soils that are already nutrient deficient and soils become compacted and hardened.</p>	Answer is partially correct, but topic may be included in the final exam.
29	<p>Q: What are the 4 trophic levels and provide an example for each level? A: The 4 trophic levels are primary producers such as plants. Primary consumers are herbivores. Secondary consumers are carnivores that eat the herbivores. Tertiary consumers are carnivores that eat other carnivores.</p>	OK
30	<p>Question: what is the difference between a seed orchard, and a</p>	OK

	<p>provenance test? Answer: The difference is that a seed orchard is an intensively managed plantation of specifically arranged trees for mass production of genetically improved seeds to create plants or seeds for the establishment of new forests. While a provenance test is something completely different. A provenance test is a special type of plantation experiment to help us understand how trees are adapted to different environmental conditions through genetic adaption.   What is a seed orchard? A seed orchard is an intensively-managed plantation of specifically arranged trees for the mass production of genetically improved seeds to create plants or seeds for the establishment of new forests.</p>	
31	<p>What is one main issue that aids in the destruction and lack of biodiversity within Chinas forests? Why? One main issue is the over exploitation of particular species in China, traditional Chinese medicine (TCM) uses the largest amount of wildlife in China. Plants and animals are being over harvested, leading to a lack of biodiversity and destruction of not just Chinas forests; but other countries where TCM ingredients grow.</p>	<p>Answer is partially correct, but topic may be included in the final exam.</p>
32	<p>What is biocentrism and what are its four components? Biocentrism is a school of thought which supports that moral obligations to nature extend to non-human species. The key components are that humans are part of Earth's community, Earth's ecosystems are all integrated, each organism has a purpose, and all organisms are equal.</p>	<p>OK</p>
33	<p>Conversion of forest to agricultural land is currently the largest driver of global deforestation. Identify and explain another. Illegal logging for fuel wood is necessary to cook food and heat homes in developing nations. Valuable wood illegally harvested for sale is also prominent in developing nations.</p>	<p>Answer is incomplete, but topic may be included in the final exam.</p>
34	<p>What are the characteristics of the trees in Tropical forests? The trees of the tropical forests have buttressed trunks and large fleshy fruits. The trees also have large leaves in the lower strata of the forest and small leaves in the upper strata. These trees tend to have thick barks.   What are the characteristics of the trees in Tropical forests? The trees of the tropical forests have buttressed trunks and large fleshy fruits. The trees also have large leaves in the lower strata of the forest and small leaves in the upper strata. These trees tend to have thick barks and tropical forests are multilayered with trees, a shrub layer and a ground layer.</p>	<p>OK</p>
35	<p>What are the most important positive and negative factors that come with adopting plantation forestry methods? On the positive side, plantations have a high yield of product, they can be used to focus on a certain species, and they have a high uniformity which is easier for harvesting. On the negative side, plantation forestry homogenizes forests; it makes forests uniform and reduces biodiversity.</p>	<p>Answer is incomplete, but topic may be included in the final exam.</p>
36	<p>What are benefits of shade trees in coffee production? Shade trees are able to regulate sunlight because coffee needs 60% exposure to</p>	<p>OK</p>

	sunlight. It can improve production and reduced the presence of pests and diseases. Also, shade trees keep the foliage of the coffee always green and regulate the flowering and ripening of the fruit, therefore the harvest. Furthermore, it can provide wildlife habitat for birds, insects, mammals and reptiles.	
37	what is an ecosystem? Is it an open system or a closed system? An ecosystem is a system that contains organisms and environment. Within this system, organisms and environment interact with each other and both bring effects. Ecosystem is an open system, it can be influenced by outside factors.	Question is incomplete and answer is partially correct, but topic may be included in the final exam.
38	Q: What are some characteristics of tropical rainforest in terms of temperature and rainfall etc.? A: In tropical rainforest, temperature varies little throughout the year. The average annual temperature is around 20°. And rainfall is relatively evenly distributed. Annual precipitation is generally more than 2500mm. Because there is no distinct seasons, trees grow year-round. Also, tropical rainforest has the most complicated biome in terms of structure and diversity.	OK
39	Briefly describe the difference between Angiosperms and Gymnosperms and provide one example of each. Angiosperms are generally characterized as deciduous trees, with fleshy leaves and enclosed seeds which tend to flower. An example of this is <i>Acer macrophyllum</i> (Big Leaf Maple) Gymnosperms are generally characterized as coniferous/evergreen trees, with needle like leaves which stay on the tree year round. They also have naked seeds or cones. An example is <i>Pseudotsuga menziesii</i> (Douglas Fir)	OK
40	Q: How might plantations, in a way, reduce the biodiversity of a forest? A: Since plantations are even aged, and genetically the same, they will all look a certain way and grow at the same time. Plantations would bring down the diversity in the aesthetics of a forest. As well as disrupting the natural functioning of a forest since the same species all play the same role, isolating only one single task. The remaining roles, crucial to the ecosystem functioning, would be left to do.	Answer is incomplete, but topic may be included in the final exam.
41	Describe what are all the trophic levels and list some examples for each appropriate category. — The trophic levels include 4 different levels: Level 1-4. Level 1 consists of organisms that produce their own food, and are called Primary Producers. Level 2 are organisms that consume primarily plants and are primary consumers. Level 3 are carnivores and are called secondary consumers. Lastly, level 4 are carnivores that consume other carnivores, also known as tertiary consumers. Examples are, trees, deer, bears to name a few	OK
42	What is an ecosystem and who first proposed the ecosystem concept? Tansley first proposed the ecosystem concept. An ecosystem is a functioning system that includes many interacting organisms and their environment, which act on them and on which they act. These relationships are very complex.	OK
43	What is a stand? A stand is a contiguous group of trees that are similar	OK

	in age, size, site location and tree condition. They are often created by large disturbances such as fire or human activity.	
44	Short Answer question on the theory of Conservation relating to the articles we were suppose to read . Who was Gifford Pinchot and what principles was he responsible for? Answer: Gifford Pinchot was a firm believer in Conservation. He was not only the 1st chief of the US Forest Services , he was also the 28th Governor of Pennsylvania. The principle he was responsible for was the Principles of Conservation which has three ideas. 1st it was how it must stands for development which using existing natural resources for the present. 2nd , it stands for prevention of waste. and the last one is how it must be developed and preserved for the benefit of the whole and not just pure profit.	OK
45	Q: What are the two main groups of trees? name a characteristic of each. The two main groups of trees are angiosperms and gymnosperms. Angiosperms are enclosed seeds and gymnosperms are naked seeds.	OK
46	Question: what is Photosynthesis? Answer: Photosynthesis is a process used by plants and other organisms to convert light energy into chemical energy that can later be released to fuel the organisms' activities. This chemical energy is stored in carbohydrate molecules, such as sugars, which are synthesized from carbon dioxide and water – hence the name photosynthesis, from the Greek φως, phos, "light", and σύνθεσις, synthesis, "putting together".	OK
47	What are the six steps involved in LVL manufacturing? First, the factory accumulates veneers. Second, The wood element is sent to be dried. We then apply glue to the dried wood element. Next, the wood is "laid-up" in stacks. Fifth, the wood is hot pressed together to bind the woods with their respective glue. Finally, the finished product is labelled and packaged; put on trucks and is en route to the distributor.	OK
48	What are Pinchot's 3 Principles of Conservation? Pinchot's first Principle of Conservation is that (1) conservation stands for development, using existing resources for today's benefit. The second principle is that conservation stands for preventing waste, and the third says that (3) natural resources must be developed and preserved for the benefit of many rather than for the profit of just a few	OK
49	Q1: What does it mean to be sustainable? Answer: The Sustainability of natural ecosystems can be defined as the dynamic equilibrium between natural inputs and outputs, modified by external events such as climatic change and natural disasters Q2: Why should forests be considered as a global concern? ? Answer: Sovereign rights of countries to control their natural resources including forests, while forestry issues are transboundary: Forest dwellers, especially indigenous people usually move across national borders Emission of GHG's initiated locally but with local, national, and global effects,	OK

	adaptation, and mitigation of climate change are global challenges Watersheds cross borders, sometimes upstream located in one country while downstream in another Ecosystems and biodiversity cross borders Forest fires, pests and diseases frequently cross borders Globalized timber and non-timber forest products processing and trade; forest business multinational Forest education and employment are becoming increasingly international	
50	What are stomates, and what function do they have? Stomates are the openings on the under-side of a leaf that have the ability to open and close to allow for the exchange of gases. During photosynthesis, carbon dioxide is taken in from the atmosphere, and oxygen is released.	OK
51	Question: What makes temperate forests important in the study of forestry? Answer: Temperate forests are important because unlike Boreal or tropical forests, they have large temperature and climactic fluctuations that happen in accord with seasonal changes. While boreal forests have a smaller growing season and tropical forests have a year round growing season, temperate forests have a middling growing season, meaning their forests must be managed more attentively. It can be said that this is part of why the practice of forestry started in temperate forests, with the first school of forestry being established in Hungen, Germany in 1787.	Answer is partially correct, but topic may be included in the final exam.
52	Why would you use engineered wood over solid wood? In general, engineered wood products are more reliable than solid wood. There is less variability in engineered wood which contributes to higher strength ratings. Additionally, smaller trees can be utilized as small pieces of wood can be glued together to possibly form larger products than solid wood can.	OK
53	What is a stand? A stand is a contiguous group of trees sufficiently uniform in species composition, arrangement of age classes, site quality, and condition to be a distinguishable unit.	Answer does not follow assignment criteria, but topic may be included in the final exam.
54	Q: Name the types of soil you would expect to find in the boreal and tropical forests, and state why. A: In the boreal, the soil is very thick on the forest floor and beneath, is full of decomposing organic matter, and holds a lot of water in bogs. This is due to the cold temperatures that slow down the decomposition of organic waste, and the glacial depressions in the boreal cause a lot of muskeg. Tropical soils are very leached of nutrients, water and severely lack substance. This is due to the high heat and moisture which takes the nutrients out, and the fast nutrient cycling of the tropical biome that allows for rapid decomposition.	Answer is partially correct, but topic may be included in the final exam.
55	Question: What is the characteristic of Tropical Rainforest? List three of them. Answers: The tropical rainforests usually have buttressed trunks when compared with other forests. They have small leaves on the higher strata, whereas larger leave in the lower strata. Also, the fast-bacterial breakdown system causes them to have less organic	Question does not follow assignment criteria, but topic may be included in the final exam.

	matter.	
56	What are bogs, and why do they exist in the boreal forest? Bogs are poorly drained glacial depressions. They exist in the boreal forest because the boreal forest consists of flat ground. The boreal forest also has slow growth and limiting ground conditions, which contributes to the poorly drained glacial depressions.	Answer is partially correct, but topic may be included in the final exam.
57	Question: What is a tree? Answer: A tree is a perennial woody plant characterized by one main stem or trunk bearing a more or less distinct and elevated crown of branches. Trees are generally larger than shrubs, approximately six metres in height.	OK
58	question:what are the types of forest in Nepal? Answer: 1)Tropical Forest (up to 1,000m) 2)Sub-tropical Forest (1,000-1,700m) 3)Temperate Forest (2,000-2,700m) 4)Upper Temperate Forest (2,700-3,100m) 5) Sub-alpine Forest (3,000-4,200m) 6)Alpine Forest (4,000-5,000m)	Question does not follow assignment criteria, but topic may be included in the final exam.
59	What is a tree? "In botany, a tree is a perennial plant with an elongated stem, or trunk, supporting branches and leaves in most species. In some usages, the definition of a tree may be narrower, including only woody plants with secondary growth, plants that are usable as lumber or plants above a specified height. Trees are not a taxonomic group but include a variety of plant species that have independently evolved a woody trunk and branches as a way to tower above other plants to compete for sunlight."	OK
60	Q:What are the characteristics of Savanna? A:1.Savanna has the great diversity of tree species but the growth rate is slow. 2. Trees are drought resistant, fire resistant and browsing resistant. 3. Mostly are resulted from human destroying forest. 4. It is the transition between tropical high forests and grasslands.	Question is incomplete, but topic may be included in the final exam.
61	What is the difference between a 'good' and a 'service'? 'Good' is something you can directly get from forests like timber, pulp paper, fuel wood. While 'service' is indirect benefits promoted by forests; for example: biodiversity, water, climate and soil	OK
62	Why do forests have transnational stakeholders? Given that national boundaries are relatively arbitrary political divisions, it is no surprise that indigenous peoples, watersheds, ecosystems, fires, pests and diseases are distributed across borders. Additionally, the timber industry is a globalised market and the effects of deforestation, namely climate change, are experienced on an international level.	OK
63	QUESTION: What are the main causes of forest destruction in the world? ANSWER: There are four main causes of forest destruction in the world nowadays, which are illegal logging, forest fires, climate change, and clearing of land for agriculture.	Answer does not follow assignment criteria and is partially correct, but topic may be included in the final exam.
64	Question: Are ecosystems dynamic or stable? Explain why. Answer: Ecosystems are dynamic because they are always changing, therefore they cannot be stable. It is necessary for ecosystems to be able to alter so they can be adaptive to outside influences.	OK

65	How a forest company can obtain forest certification? The forest company that wants to obtain a forest certification needs to be verified through a third-party to make sure it complies with the required standards. Accredited auditing companies also involve in this process to perform an audit for evaluating the company's performance in order to determine the eligibility. A corrective action can be required and the certification report will be issued.	OK
66	What is forest ecosystem service? What are some forest ecosystem services related to climate? Forest ecosystem services are direct and indirect benefits promoted by forests. Standing forests and ground can store carbon in order to reduce greenhouse gas emission. In addition, forests regulate air humidity and temperature. Air quality is also improved by forests due to the reduction of pollution.	OK
67	What's the difference between angiosperms and gymnosperms? Angiosperms and gymnosperms are two main groups of trees. Angiosperms has enclosed seeds, relatively harder woods, and shorter fibers. They are broadleaved trees and mainly deciduous. Gymnosperms has naked seeds, relatively low specific gravities, and longer fibers. They are mainly softwood and evergreen.	OK
68	What are some challenges in Canadian forestry, and how do they affect the forests/us? Some challenges in Canadian forestry are biological issues such as insects and fire, and people/political issues, such as the softwood lumber dispute and climate change. Insects affect trees in that they kill many trees and they continue to spread and fires affect trees as they kill many trees and although some are controllable, some are not, destroying a lot of trees. As for the Softwood Lumber Dispute, it affects Canadian forestry as the US is trying to restrict imports which would affect Canadian economy. For climate change, it affects our forests as it increases the intensity of our biological issues such as forest fires.	OK
69	Provide one distinct characteristic of the two different categories of trees, angiosperms and gymnosperms. Angiosperms: relatively harder woods Gymnosperms: naked seed plants	Answer does not follow assignment criteria, but topic may be included in the final exam.
70	Q: Name two benefits of Engineered wood products over solid wood products. A: Engineered wood products are considered to be more reliable than solid wood products. Furthermore, engineered wood products have higher strength ratings than solid wood products.	OK
71	Q :What is purchasing power parity and how does it link to global trade in wood products? A: Purchasing power parity is how many of a country's currency that is required to buy the same quantity of goods and service in the United States with same value of US dollars. It is important to know because it shows the economic power of developing countries and the growth of the country in the wood industry, which influences the trade of wood in the world market by balancing the purchasing power and expressing the increase in purchasing power as well.	OK

72	What is xylem and how does it work? Xylem is one of the two types of transport tissue in vascular plants. They are like a straw that is used for evaporation from leaves that pulls up water. The movement of water is always up (roots to leaves). Xylem is easily broken or clogged and needs to be constantly be replaced.	Answer is partially correct, but topic may be included in the final exam.
73	What are the benefits of shade trees in Peru coffee production? List three examples in full sentences. Shade trees regulate sunlight as coffee needs 60% exposure to sunlight. They also improve the production and reduces the presence of pests and diseases. Lastly, they help fix nitrogen to the soil and reduce soil erosion.	OK
74	What is a difference between forests goods and services? Goods are tangible benefits such as timber, pulp, fuelwood and non-timber forest products (NTFP's). Services are intangible benefits such as carbon sink, improving air quality, and regulation of air humidity and temperature.	OK
75	What is the reduction of natural variability? When variability is reduced, the flaws in veneer can be removed or distributed to other areas. Also, the yield of veneer from logs is higher than the yield of solid lumber.	Question is incomplete, but topic may be included in the final exam.
76	Question: Identify one natural disturbance and explain one positive and one negative aspect of the effects it has on an environment. Answer: One benefit is understory brush control in biomes such as the boreal forest. If too many dead plants build up then trees wouldn't be able to get enough nutrients due to the extremely slow decomposition rate. A negative aspect of forest fires is habitat fragmentation.	Answer is partially correct, but topic may be included in the final exam.
77	Describe the Trophic Levels. From level 1 to level 4. Level 1 of the Trophic level is called primary producers, they are plants and algae which make their own food. Level 2 is herbivores eat plants which are called primary consumers. Level 3 is carnivores eat herbivores, called secondary consumers. Level 4 is carnivores eat other carnivores and are called tertiary consumers.   Sorry it should be like this : Q: Describe the Trophic Levels. From level 1 to level 4. A: Level 1 of the Trophic level is called primary producers, they are plants and algae which make their own food. Level 2 is herbivores eat plants which are called primary consumers. Level 3 is carnivores eat herbivores, called secondary consumers. Level 4 is carnivores eat other carnivores and are called tertiary consumers	OK
78	What is the mountain pine beetle and what is there impact on BC forests? The mountain pine beetle is a type of insect native to Northerwestren North America. The beetles burrow into pine trees, proceeding to lay there eggs under the bark. The insects infestation ultimately kills the tree and leaves behind fully grown larva to spread to other trees. The mountain pine beetle impact on BC's forests is contributing to 50% of commercial lost on pine trees.	OK
79	What is the timber productivity like in the tropical biome? Tropics have low commercial productivity because vegetation does not	Answer is partially correct, but topic may be

	regenerate easily nor regain back to their original structure and composition. Also, the soil is infertile and nutrients are heavily leached into groundwater or are destroyed by weathering.	included in the final exam.
80	What are some of the ways that can improve a stand structure in a forest? Weeding and thinning are some ways that can improve the stand structure through the removal of trees. Weeding gives advantages to certain species through chemical and mechanical ways that removes a group of trees or plants. On the other hand, thinning allows the removal of smaller or unwanted trees that allows the survival for the favoured plants. There are two main ways that are used for thinning: commercial harvest and precommercial harvest.	Question is incomplete, but topic may be included in the final exam.
81	Name 3 structural changes in (or affecting) timber supply. The 3 structural changes that affect the supply of timber are: Decrease in annual allowable cut, increasing fiber costs and increasing in natural disturbances.	Answer does not follow assignment criteria, but topic may be included in the final exam.
82	Question: Name the two types of challenges Canadian Forestry faces and provide one example for each. Answer: There is biological issue such as insect infestation. Mountain Pine Beetle decimated lodge pole pine population in British Columbia. There is people/political issues such as relationship with First Nations. Respecting lands rights of First nations.	OK
83	What is urban forestry and some of it's key characteristics? Urban forestry consists of the art, science, and technology of maintaining trees. It's five key characteristics include integrative, strategic, inter-/multidisciplinary, participatory, and urban.	OK
84	Q: what are the two schools of thought for conservation and explain them. A: Anthropocentric and biocentric. Anthropocentric is a human centered thought saying that nature only has the value that humans assign to it. Biocentric is saying that humans are part of the earth's community, each organism has its purpose and value to exist, and all organisms are equal.	OK
85	Are more of the world's forests in the temperate or the tropical region? In the tropical region. This is because boreal and temperate forests account for 44% and tropical and subtropical forests account for 56% of the world's forest area.	OK
86	Question: What is sustainability? How can we ensure lumber harvesting is sustainable? Answer: Something is sustainable when it can be considered capable of meeting the needs the present and the future. This capability needs to be present through not only an environmental lens, but also a social and economic one. For example, with lumber harvesting, this act can be sustainable from an environmental lens if the amount of trees harvested is carefully monitored to ensure that the environment is not severely impacted from the sudden lack of trees. An example of a way the surrounding environment is impacted by harvesting is the impact on the amount of nutrients in the soil. Lumber harvesting can be sustainable economically if enough lumber is harvested each year so that people	OK

	in the area relying on the industry have jobs and the demand for lumber is consistently satisfied physically and financially. Lastly, lumber harvesting can be sustainable socially if considerations on greenhouse gas emissions are taken into account prior to harvesting. This would help prevent the emission of excess greenhouse gases that further contribute to global warming and climate change. If all of these things were completed, the lumber harvesting process could be considered sustainable.	
87	What is professionalism and what is ethics? Professionalism is demonstrable awareness and application of qualities and competencies covering knowledge, appropriate skills and behaviours. Ethics covers the conduct and moral principles recognised as appropriate within the project management profession.	OK
88	What is the biome of Vancouver? State the characteristics of the biome. Vancouver is in the biome of the temperate rainforest. Temperate rainforest experience rainfall at least 200cm annually and experiences four very distinct seasons, unlike the rainforest biome.	Answer is partially correct, but topic may be included in the final exam.
89	Q: Question: Define renewable resource and non-renewable resource. Answer: renewable resource: any resource, such as wood or solar energy, that can or will be replenished naturally in the course of time. non-renewable resource: any natural resource from the Earth that exists in limited supply and cannot be replaced if it is used up; also, any natural resource that cannot be replenished by natural means at the same rates that it is consumed	OK
90	Question: What's a forest and what's a forestry? Answer: A forest is a vegetative community dominated by trees and other woody perennials. Forestry is the science, art, and practice of understanding, managing and using wisely the natural resources associated with, and derived from forest lands.	OK
91	Q: What is the definition of a tree? A: A tree is a woody perennial plant having a single usually elongate main stem. A tree generally has few or no branches on its lower part. Also, most species have leaves as well.	OK
92	Q: In general, ecosystems are dynamic. Name and define the two factors that make ecosystems dynamic. A: The two factors that make ecosystems dynamic are autogenic and allogenic changes. An autogenic change is one formed without outside influence; whereas an allogenic change is one caused by outside agent(s).	OK
93	Question: Who and what make up of the four trophic levels? A: The first trophic level consists of plants and algae that make their own food and are considered primary consumers. The second would be herbivores that eat plants and are considered primary consumers, followed by carnivores that eat herbivores and are called secondary consumers. The fourth trophic level would be carnivores which eat other carnivores and are called tertiary consumers.	OK
94	What is the difference between even-aged and uneven-aged stands and how do these stands originate? Even-aged stands are comprised	OK

	of trees that are predominantly the same age. These stands generally originate after stand-replacing disturbances such as a forest fires or natural disasters that happen in one area. What is meant by stand replacing is that all trees are killed, not just some. In contrast, Uneven-aged stands are comprised of trees of several ages. These stands usually originate from small scale disturbances that do not kill all trees, rather only some of the trees. Thus, these disturbances are not stand replacing. Where some trees are killed or blown down, younger trees have the opportunity to grow up in the openings.	
95	What are the similarities and differences of the ideologies between Pinchot and Leopold? They both emphasis the importance of conservation for present and future generations. But Pinchot tends to be more utilitarian and Leopold tends to prefer the integrity of nature. In other words, conservation for Pinchot is to have sustainable resources and for Leopold is a caring action paid by human to nature.	Answer is partially correct, but topic may be included in the final exam.
96	What is a tree and which 2 main groups do trees fall into? Answer: Trees a perennial woody plant characterized by one main stem or trunk bearing a more or less distinct and elevated crown of branches. They are generally larger than shrubs. Trees fall into two main groups which are angiosperms and gymnosperms.	OK
97	Q: Why is planting trees helping to reduce climate change? A:There are two ways of reducing the amount of CO <sub>2</sub> in the atmosphere. Produce less CO <sub>2</sub> and remove CO <sub>2</sub> from the atmosphere and store it. Trees can do both, forests have a key role in monitoring the climate, because trees by their photosynthesis absorb CO <sub>2</sub> from the atmosphere and store carbon as wood and organic matter in the soil.	OK
98	Using examples, differentiate angiosperms and gymnosperms to the best of your ability. Angiosperms tend to have an enclosed seed and have flowering plants. They tend to have broad leaves. They are deciduous, meaning they lose their leaves in the fall season. Gymnosperms tend to have cones (naked seeds). Conifers fall into this group, which have needles.	Answer is partially correct, but topic may be included in the final exam.
99	Why should forests be considered as a global concern? Forest should be considered a global concern because forest dwellers, especially indigenous people usually move across national borders. Also, the emissions of GHG's initiate locally but have global effects. Another reason is that ecosystems and biodiversity cross borders and forest education and employment are becoming increasingly international.	OK
100	Question: What are the two parts of a tree's vascular system and what are their purposes? Answer: A tree's vascular system consists of xylem and phloem. The xylem acts as a system of tubes that transports water and dissolved minerals to the plant. The phloem essentially transports the foods, which are the sugars and molecules, to the rest of the cells of the tree for energy.	OK
101	Q: Why can forest fires be beneficial for forests? A: Letting forest fires burn naturally can pose many benefits to forests. It can get rid	OK

	of insect infestations or diseases. As well in certain fires heat is needed to cause certain seeds to open up and sprout. Lastly a forest fire can give an old forest a fresh start by causing a new turnover and putting nitrogen and carbon back in the ground from burnt organic matter that decomposes.	
102	What are the 3 components or branches that make up sustainability? The 3 branches of sustainability are social, economic and environmental parts.	Answer does not follow assignment criteria, but topic may be included in the final exam.
103	What is forest certification and why is it beneficial? Forest certification is a market mechanism used to promote sustainable forest management by informing consumers that a product comes from a well-managed forest. It is beneficial because it can be used to streamline forest operations and can be used as a tool to fight illegal logging. It can also be used for carbon accounting.	OK
104	Who is Aldo Leopold? He taught wildlife management at University of Wisconsin-Madison. He created the world's 1st wilderness area. He believed that nature was a system, and that we should strive to preserve the integrity, stability and beauty of the biotic community.	OK
105	Why does the Boreal forest biome have a slower forest floor decomposition compared to a Tropical forest biome? A Boreal forest biome has a slower forest floor decomposition because the nutrient release of the forest is slow and since the forest floor is covered by deep organic litter it is harder to decompose. In addition, the cold severe weather also plays a role in slow decomposition. However, with a Tropical forest biome because it is warmer it decomposes faster.	Answer is partially correct, but topic may be included in the final exam.
106	Question: What are the two school of thoughts that defines the frameworks for valuing nature? And what are the main themes of them? Answer: The two distinct approaches are "bio-centrism" and "anthropocentrism". Biocentric approach states that nature has intrinsic value (value unto itself). Whereas anthropocentric approach states that nature only has the value(s) that humans assign to it, implying that forest conservation is human-centred and the rights of human are paramount.	OK
107	What is the goal of silviculture? Silviculturists work to develop stands of the forest in order to benefit not only those who own the land, but society as a whole. Silviculture is a mix of forest science and art.	Answer is partially correct, but topic may be included in the final exam.
108	SQuestion: Do tropical rain forests regenerate easily? Why? Answer: No, most nutrients are leached from soils that are already nutrient deficient, tropical rainforest are characterized by significant leaching and poor nutrients, it has little accumulated nutrients due to the rapid bacteria breakdown. Soils become compacted and harden (laterization), and also water logging and erosion occur. Acid red clay soils and weathered soils aren't favourable for plants no grow on, therefor tropical rainforest is difficult to regenerate.   Question:	OK

	What is the difference between weeding and thinning? Answer: Weeding is used to shift a competitive advantage to certain species. Thinning, on the other hand, is a shifting of competitive advantage to certain individuals.	
109	What biome has the most second-growth plantations as opposed to naturally grown forests? Why? The temperate forest biome has the most second growth plantations. This is the zone occupied by the world's industrialized nations in which the consumption of industrial forest products is very high. In Asia and Europe most of the forest has been cleared for agriculture and urban infrastructure. The biome's history of exploitation for commercial timber has resulted in virtually no primary forests remaining in the temperate mixed forest zone.	OK
110	Between boreal, temperate, and tropical, which forest biome has the lowest commercial productivity rate and why? The tropical forest has the lowest commercial productivity rate at roughly 0.3-0.5 cubic metres/ha/annum. This is largely because the tropical forests do not regenerate easily, nor do they retain their original structure and composition after they are cleared. In this biome, nutrients are leached from soils that are already nutrient-deficient, which results in the soil becoming hard and compacted. This also leads to erosion and waterlogging, both of which are not helpful in terms of boosting commercial productivity.	Answer is partially correct, but topic may be included in the final exam.
111	What is the difference between a angiosperm and a gymnosperm? Angiosperms are trees that flower and usually have enclosed seeds. They are distinguishable by their broadleaves that are mainly deciduous (they lose their leaves every year). Gymnosperms in contrast are trees that have cones and naked seeds. These trees are distinguishable by their needle (except ginkgo and red wood cedar) and are every green, meaning they keep their leaves all year (except larch).	OK
112	What biome has the least fertile soils and why. The tropical rainforest has the least fertile soils. This is because most of the nutrients are either washed away by rainwater or used by the large number of pre-existing plants	Answer is partially correct, but topic may be included in the final exam.
113	What are the principles of conservation according to Pinchot? 1. Conservation stands for development: the use of existing natural resources for the benefit of the present. 2. Conservation stands for the prevention of waste. 3. The natural resources must be developed and preserved for the benefit of the many, and not merely for the profit of a few. What are the two main groups that trees fall into? The first group of trees is angiosperms which is characterized by having enclosed seeds or flowering plants. The second group of trees is gymnosperms that have naked seed plants or cone bearers (conifers)	OK
114	What are the different trophic levels and what are their uses? 1. primary producer: converts solar energy to nutrients through photosynthesis 2. primary consumers: herbivores, feeds off primary	OK

	producers. 3. secondary consumers: omnivores, feeds off primary consumers. 4. tertiary consumers: carnivores, feeds off secondary and primary consumers	
115	How can natural disturbance be beneficial for a forest or ecosystem? Disturbance brings regeneration and variety to a forest. Fires burn off ground debris and insects and disease can change the type or amount of species living in an area. Disturbance allows for new growth and creates balance in an ecosystem.	Answer is partially correct, but topic may be included in the final exam.
116	What are some of the advantages and disadvantages of engineered wood in comparison to solid wood? Engineered wood tends to have a higher strength and has a higher reliability than solid wood. Some disadvantages of engineered wood include less variability and a reduction in biodegradability.	OK
117	Q: What are the benefits of engineered wood products compared to solid wood? A: Engineered products are more reliable because of the composition, and their strength ratings are higher than solid wood. What's more, engineered wood products are more shapable in construction use. Last but not least, in the engineered wood production, smaller trees can be utilized rather than merely trunk of trees.	OK
118	How much forest is there in the world? Forests cover 30% of the earth's surface. Forests are unevenly distributed around the world. Top 10 most forested countries, which include 2/3 of all forests in the world, are Russia, Brazil, Canada, USA, China, Australia, Democratic Republic of Congo, Indonesia, Peru and India.	This type of question will not be included in the final exam.
119	Question: What are the features of anthropocentrism? An anthropocentric form of belief is one where nature only has the value that humans assign to it. In this belief, human rights are paramount, and everything is human centered.	OK
120	What is a forest and how are they distributed globally? A forest is a vegetative community dominated by trees and other woody perennials. There is an uneven distribution of forests in the world, as their location depends on climate. For example, tropical forests are found nearer the equator due to the higher temperatures and rainfall, providing a year-round growing season. On the other hand, boreal forests are found south of the arctic tundra as this type of forest needs a colder climate, with long severe winters and not much precipitation.	OK
121	What does the xylem move and how? The xylem moves water from the tips of the tree roots to the leaves. Water in the leaves evaporates, drawing water up through the xylem like a drinking straw.	OK
122	Q: What are the differences between Leopold and Pinchot's views on conservation? A: Pinchot has an anthropocentric view on conservation in that nature exists for human use but not abuse. Pinchot believes in using nature for the greatest good, for the greatest number, and for the longest time. Leopold has a biocentric	OK

	view in which he believes nature has intrinsic value. Leopold considers nature a series of interdependent parts where humans are just one of those parts.	
123	Q: What are uneven-aged and even-aged stands? A: Uneven-aged stands are when the trees are harvested in small groups or alone throughout the forest on a schedule in order to achieve a specific growth rate on a unit area of land. Even-aged stands are when trees are harvested all over a large area, instead of individual scattered trees. They are harvested, on a schedule which allows the process to continue regularly	Answer is incorrect, but topic may be included in the final exam.
124	What are two transport systems in trees and describe them both? Two transport systems in trees are Phloem and Xylem. Both have distinct functions, phloem transports food and nutrients from leaves to organs, roots, and other growing parts of the tree. Xylem, on the other hand, transports water and other minerals from the roots up to other parts of the tree.	OK
125	Pinchot was the first head of what organization? He was the 1st Chief of the U.S. Forest Service.	Answer does not follow assignment criteria, and this type of question will not be included in the final exam.
126	Q: What are some of the biggest challenges of conservation in China in the near future? How can we improve it? A: The pollution of water air and soil is still a big concern in China, and this has a big impact on both China's economy and China's society. The economic slow down is a great opportunity for China to put more effort on investing conservation programs and avoid low efficiency businesses. More research is necessary for China's government to develop new and consistent policies in order to keep forests sustainable.	OK
127	Describe the principles of conservation. There are three principles of conservation. The first one says that conservation stands for development, meaning the use of existing natural resources benefit the present. The second, conservation stands for the prevention of waste. The third, says that the natural resources must be developed and preserved for the benefit of the many, and not merely for the profit of a few.	Question is incomplete, but topic may be included in the final exam.
128	What is an ecosystem service and what are the four main categories? Ecosystem services are the goods and services that are provided by the ecosystem to benefit humans. They can be grouped into four different categories: Provisioning, Regulating, Cultural, and Supporting services. A few examples of an ecosystem service is carbon sequestration, air and water filtration, or recreation.	OK
129	Q: What is a silviculture system and comment on how this system can help improve upon nature. A: A silviculture system is a series of activities that are linked together to meet a set of objectives. The way silvicultures can help improve on nature is by control of stand structure and size, control of stand composition and control of stand	OK

	density. Silviculture is involved in monitoring all these aspects which gives room for positive human intervention.	
130	Why might a community like Yunesit'in advocate for community forestry. A lack of housing and jobs in the region, despite a considerable amount of forestry, provokes a desire to manage their own land and introduce more jobs, using processed wood products on infrastructure. Furthermore decolonizing values cause residents to desire increased sovereignty and self management of largely unceded forest land.	OK
131	What are some strategies that can be used to meet the future demands of timber? List at least 3 of them. There are few possible strategies: reducing the demand of wood, cutting existing forests faster, and managing existing forests more intensively. Moreover revitalizing destructed forests and planting new ones are also possible strategies that can help meet the future demands of timber.	Answer is incomplete, but topic may be included in the final exam.
132	Distinguish between even-aged trees and uneven-aged trees. Even-aged trees are tree stands that comprise of the same age. These stands usually originate from a stand clearing disturbance such as a forest fire or winds. On the other hand, uneven-aged stands are comprised of trees that are of several or multiple different ages. This happens due to small disturbances that kill some but not all trees.	Question is incorrect. Even age stands.
133	Q.) Are engineered wood products preferable to soft wood? If so, what are some reasons? A.) Engineered wood products are preferable to soft wood. This is because higher strength ratings are possible which result in a more durable product. Engineered products also make use of smaller trees and can provide a larger range of dimensions than soft wood.	Question is incorrect, but topic may be included in the final exam.
134	Q: Compared to solid wood products, what are the benefits of engineered wood products? A: Engineered wood products are more reliable, higher strengthen ratings, larger dimensions possible, and smaller trees can be utilized.	Answer does not follow assignment criteria, but topic may be included in the final exam.
135	Why does the boreal biome have a relatively low commercial productivity? The boreal has a relatively low commercial productivity due to its low temperatures, lack of infrastructure, slow growth rate, bad ground conditions for forestry operations, and generally less valuable species.	Answer does not follow assignment criteria and is partially correct, but topic may be included in the final exam.
136	What are the benefits of engineered wood products compared to solid wood? The engineered wood products are more reliable and more consistent. They have higher strength ratings. They give wood larger dimensions possible because people can make use of smaller trees by gluing them together.	OK
137	How do roots work? What are the xylem and phloem? First, the roots absorb both water and nutrients from the soil and transport those materials to the trunks to support the growth of the trees. Second, the roots stretch to the deep soil for more absorption and stabler. This means the roots work as anchors which firmly get into the soil to prevent the movement of the trees. On the other hand, the phloem	OK

	is a two-way-transport part of the tree that transports chemicals from a higher concentration to a lower concentration while the xylem only pulls up water from the root to the leaves. The xylem can easily be broken so it will be replaced constantly.	
138	Question: Describe and distinguish even-aged and uneven-aged stands. List one advantage of both types. Even-aged stands are composed of trees that are mostly similar in age, which occur after a stand-replacing disturbance. One advantage of even-aged stands includes the ability to make genetic improvements, if required, when planted. Uneven-aged stands are a collection of trees of multiple ages, usually arising after smaller-type disturbances that remove only some of the trees. One advantage of uneven-aged stands includes a (normally) more biologically diverse collection of trees.	Answer is partially correct, but topic may be included in the final exam.
139	What is the biome of West Vancouver? List the identifiable traits of the biome. West Vancouver is in the temperate rainforest biome. Temperate rainforest experience rainfall at least 200cm annually as well as four very distinct seasons. Fall, Winter, Spring and Summer all have noticeable changes.	OK
140	Q. What are the advantages of softwood compared to softwood? A. Engineered wood are more reliable because they have higher strength rating, therefore it is more suitable for construction. It also allows smaller trees to be utilized since smaller trees can be glued together into a larger piece.	Question is incorrect, but topic may be included in the final exam.
141	Q: Describe the concept of sustained yield and how that can be interpreted as a measure of sustainability for a an identified forest management area? A: The sustained yield as a concept can be a guide for forest management. Sustainable yield directs the level at which the harvesting of the forest is considered to be sustainable over time. When the harvest level available is above the Long Run Sustained Yield it is perceived to be considered sustainable for a certain identified forest management area. A decline in the level of available harvest, which falls below the Long Run Sustained Yield would be considered to be unsustainable over time.	OK
142	QUESTION Define deciduous and coniferous trees. Provide three differences between these trees as well as examples. ANSWER: Definitions: Deciduous trees: refers to trees that shed their leaves during certain times of the year, usually in the autumn. Can be found in tropical and temperate climates all over the world. Examples include Sugar maples, aspen, oaks trees etc. Coniferous Trees on the other hand refers to cone bearing trees with needle-like leaves. Examples include pines, redwoods, cedars, yews firs etc. Differences Deciduous trees have broad leaves compared to coniferous trees. In contrast, coniferous trees have needle-like leaves. However, certain coniferous trees such as Arbutus have broad leaves. Deciduous trees do not retain its leaves throughout the entire year and usually shed its leaves in certain seasons of the year (i.e. autumn). In contrast, Coniferous trees retain their leaves the entire year and only shed its	OK

	old leaves. Deciduous trees throughout the seasons have leaves that are transformed into different colours such as reddish, yellowish and greenish leaves. For instance, during the fall most deciduous trees leaves turn red or yellow or even orange. In contrast, coniferous retain a green coloured leaves throughout the year.	
143	Q: What are the trophic levels? A: Trophic levels are used to classify any group of organisms that is ranked on the same level of the food chain. Trophic levels are the standing in the food chain from where any organism receives its energy. The trophic levels contain autotrophs, primary consumers, secondary consumers, and tertiary consumers.	OK
144	Q: What is the most significant driver of global deforestation and why? A: The most significant driver is agriculture, which accounts for approximately 73% of deforestation in the tropics and subtropics. This is primarily because of population growth, changing of food consumption patterns, and agricultural technological development.	OK
145	Question: What do you see as the lasting impact of Aldo Leopold's work? Answer: Leopold was influential in connecting the ideas of ethics to the planet. His work defined conservation for the previous century and many to come. The relationship between human and land was brought to the forefront by Leopold and those who followed in his footsteps.	OK
146	Which forest biome is the most diverse in terms of species and what are some characteristics of the trees located in it? The biome with the most diverse species is the tropical rainforest. Trees in this biome are typically characterized by thin bark, large fleshy fruits, large leaves in the lower strata of the forest and small leaves in the upper strata and buttressed trunks.	OK
147	Identify the two main groups of trees? Also, what is the main difference between plants that belong to each group? The two main groups of trees are Angiosperms and Gymnosperms. The main difference between Angiosperms and Gymnosperms are Angiosperms are plants with enclosed seeds or are flowering plants. Whereas, Gymnosperms are plants with naked seeds or bear cones (conifers).	OK
148	What does it mean to be sustainable? When the three components that make up sustainability work together to make a sustainable system. These are the economic, environmental, and social parts that make up a sustainable system.	OK
149	List some differences between Boreal forests biome and Tropical forests biome. In boreal forests regions, the winters are much longer than summers, but in tropical forests, there is no distinct seasons, the tree growing year-roundly and the temperature remain around 20 degree Celsius. In addition, the break down of organic matters and nutrient release in boreal forests are slower than the tropical forests, and boreal forests are covered by deep organic litters but in tropical forests the soils are generally infertile, the accumulation of organic	OK

	<p>matters always less than boreal forests due to the rapidly bacterial breakdown. The main region that tropical forests located at is between latitude 0° to 30°, but for boreal forests, it's between latitude 30° to latitude 60°. The tree species of boreal forests will be vary with geographical location, the main species are spruce, pine, fir and larch, but in tropical forests, the tree species will be around thousands, for example, the tree species in Brazilian Amazon forest is around 6000.</p>	
150	<p>What are the five major biomes and list three things about each one. The five major biomes are the Boreal Forest, the Temperate Rainforest, Tropical Rainforest, Seasonal Rainforest, and the Savannah. The Boreal Forest has more snow than rain, has a slow growing season and has lots of organic litter on the forest floor. Temperate rainforest has a longer growing season, the trees vary in age, and there is a high forest management activity present. The Tropical rainforest is the most complex biome, the trees have the following characteristics: thin bark, fleshy fruit, large leaves and buttressed trees. The seasonal rainforest has alot of deciduous trees, has many wet and dry seasons, and has alot of commercial plantations. The savannah has dry forests and the trees are drought, fire and browsing resistant with the rough twisted bark.</p>	OK
151	<p>Question: What are the 4 trophic levels and provide an example for each level? Answer: The first trophic level is primary producers such as plants. Then, it's the primary consumers, which are the herbivores. Next it's the secondary consumers, they are the carnivores that eat the herbivores. Last, it's the tertiary consumers which are carnivores that eat other carnivores.</p>	OK
152	<p>Give three examples of key lessons that can be learned from the conservation efforts made in China. 1. A one-size-fits-all model cannot be used in regions with a large amount of biodiversity and many management goals. 2. Follow-up research is necessary for developing new policies to adapt to both expected and unexpected changes. 3. Consultation is very important for developing local- and community-focused plans. There are four other possible responses to this question.</p>	Answer is partially correct, but topic may be included in the final exam.
153	<p>Q: When considering conservation name and explain the two schools of thought? A: The two schools of thought are biocentric and anthropocentric. Biocentric thinking means nature has value unto itself free of humans and moral obligations extend to a non-human species. The second route of thinking anthropocentric which means nature only has value that have been assigned by humans, When considering nature and conservation the rights of humans are paramount.</p>	OK
154	<p>What is Urban Forestry and what is one key characteristics of it? Urban forestry is the art, science, and technology of managing trees and forest resources in and around urban community ecosystems to provide physiological, sociological, economic, and aesthetic benefits</p>	OK

	to society. One key characteristic is how multi-disciplinary (many fields) urban forestry encompasses.	
155	Q:Do you think that Stanley Park is a forest? Describe 3 reasons why you think it is or is not a forest. A:Stanley park is a forest because it is a vegetative community, dominated by trees or other woody perennials.	Answer does not follow assignment criteria and is partially correct, but topic may be included in the final exam.
156	Do Ecosystems change or stay the same? Name 2 types of change : Ecosystems are Dynamic, Structure is always changing 1. Autogenic change – Without outside influence 2. Allogeneic change – Outside agent effects	OK
157	Q: What are the main priorities of energy? How do trees allocate their energy? A: The most basic component is respiration, as it is required for the tree to survive. The second most important is photosynthetic mechanism, to grow more branches and leaves. Third, is reproduction, the ability to pass on their genes. Fourth is the primary growth, in terms of height. Lastly is the secondary growth, the growth of the tree in diameter.	OK
158	Q: What is the difference between the temperate and boreal forests? A: First, boreal forests typically contain only uniform coniferous trees while temperate forests contain a variety of trees with mostly broad-leaved deciduous trees; second, boreal forests typically have low precipitation and low temperature, with high accumulation of organic matter while temperate forests have high precipitation and low accumulation of organic matter.	OK
159	Name three main SFM certification systems: Answer: FSC SFI CSA	Question and answer do not follow assignment criteria, but topic may be included in the final exam.
160	What is the definition of a tree and a forest? A tree is definite as a perennial plant that has one elongated main woody stem generally with few or no branches on its lower part. A forest is a vegetative community dominated by trees and other woody perennials.	OK
161	Q: Why don't tropical rainforest regenerate easily? A: Because nutrients are leached from soils that are already nutrient deficient. soils become compacted and harden (laterization). Waterlogging and erosion occur. This leads to the situation that cleared tropical rainforests frequently revert permanently to grassland and derived savanna.	OK
162	Q: Why don't tropical rainforest regenerate easily? A: Because nutrients are leached from soils that are already nutrient deficient. soils become compacted and harden (laterization). Waterlogging and erosion occur. This leads to the situation that cleared tropical rainforests frequently revert permanently to grassland and derived savanna.	OK
163	Q:Do you think forestry is a natural science or a social science? A:The	OK

	<p>forest science journals need to pay more than lip service to the inclusion of social science material: in an ideal world, the social sciences would be placed on equal footing to the natural sciences. To achieve this social scientists need to ensure that the quality and relevance of their work meets the expectations of the forestry community. To answer the question posed in the title of this editorial: forestry is not a social science. However, it is also not a biophysical science. Instead, it is a truly interdisciplinary science that brings together many different traditional disciplines. It is time to recognize this.</p>	
164	<p>What do we mean by the term “plus tree selection”? The starting point of any breeding programme. Identification and selection of the very best individuals that will form the basis of the breeding stock.</p>	OK
165	<p>What do people must consider when measuring the sustainability? Sustainability measures must have scales, both temporal and spatial. In the meantime, disturbances from nature and human beings also need to be included when choosing the scales.</p>	OK
166	<p>What are two groups of trees? And what are the differences between them? The two groups of trees are angiosperms and gymnosperms. The differences between them are that angiosperms are flowering plants and have enclosed seeds. While gymnosperms have no flowers or fruits, and have naked seeds.</p>	OK
167	<p>Why is forestry a global concern? International forestry is important because country borders were created by modern civilizations and their history, and aren't in a specific location for any well-defined reason. Nature doesn't care where the borders are and is continuous over them. For example, water and pollution cross borders, many animal's territories are in multiple countries, and even native peoples tend to ignore borders. Therefore, it is essential for neighboring countries to be considerate of one another. Even recently, when Montana had forest fires a few months ago, BC was clouded with the smoke.</p>	OK
168	<p>Name 2 categories of trees and give a brief description: Angiosperms: They are usually enclosed seeds, flowering plants, broad leaved trees with relatively harder woods and shorter fibers. They were also founded 125 M years ago. Gymnosperms: They were founded around 350-360 M years ago. They are usually naked seed plants, or cone bearers (conifers) which are not enclosed. Conifers usually have needles. They are relatively soft woods with longer fibres. An example would be an evergreen</p>	OK
169	<p>Question:What differentiates a tree from a shrub? Answer: A tree differs itself from a bush. The two differ because although both are seen as woody perennial plants, a bush is much shorter, and rather than having one main trunk like a tree, a shrub can have many stems coming from the ground.</p>	Question and answer do not follow assignment criteria, but topic may be included in the final exam.
170	<p>Q: What are the two main transport tissues in a stem and how they function? A: Xylem and phloem are the two main transportation</p>	OK

	tissues that are in a stem. Xylem is responsible for transporting water and nutrient from root to shoots and leaves. Phloem is a living tissue that transports the organic compound that is made during photosynthesis to all the parts of the plant	
171	What are the advantages and disadvantages of plantation? Advantages: plantation are very productive with shorter rotations in order to meet the high demand of timber, and help ecosystem to recover from the deforestation. Disadvantages: the loss of biodiversity such as loss wildlife habitats, and the impact on water table, like inefficient water uses, genetic selection exacerbates this concern, and water with salinization.	OK
172	State and Define the two schools of thought in valuing nature. The two schools of thought are called Anthropocentric and Biocentric. Anthropocentric is the idea that the values of nature are only those that are assigned by humans. Biocentric is the thought that nature has its own intrinsic value.	OK
173	What are the three common insects that greatly affect forests in Canada? Why is insect considered as a serious biological issue in Canada? Mountain Pine Beetle, Spruce Budworm and emerald Ash Borer are the three very specific insects that negatively influence forests of Canada. Approximately 50% of the lodgepole pine has been killed by mountain pine beetle in BC province and it's now attacking the Jack pine in largest vegetation zone of Canada- boreal biome. Spruce worm has led insect outbreak throughout many areas of eastern Canada such as Quebec. The natural disturbance associated with emerald Ash Borer has tremendously damaged ash trees in many urban areas of Canada.	OK
174	Question: What are forest ecosystem services worth? Answer: Firstly, it is essential to assign an economic value to ecosystem services. Secondly, a specific market is necessary.	Answer is incomplete, but topic may be included in the final exam.
175	About how much of the earth's surface is covered by forest? Answer: The world's forest area is about 3.8 billion ha. About one-third of world's land area which is not covered with ice	This type of question will not be included in the final exam.
176	Which biome is the most complex in terms of structure and species diversity? It is tropical biome. Because it has a higher temperature and higher precipitation, longer growing season.	OK
177	What are some regulatory principles of Professional Forestry in BC? What are some traits that distinguish a professional forester? Professional Foresters are governed by a 12-person elected council, and the registration body is the ABCFP. Professional foresters are defined by their registration with this body, both their knowledge and experience in the field of forestry, and the acceptance of the need to adhere to codes set by such regulatory associations.	OK
178	Q: what's the Principles of Conservation? A:1. Conservation stands for development: the use of existing natural resources for the benefit of the present. 2. Conservation stands for the prevention of waste. 3.	Question is incomplete, but topic may be included in the final

	The natural resources must be developed and preserved for the benefit of the many, and not merely for the profit of a few.	exam.
179	Question: What is a tree? Answer: A tree is a perennial woody plant characterized by one main stem or trunk bearing a more or less distinct and elevated crown of branches.	Answer does not follow assignment criteria, but topic may be included in the final exam.
180	1. Why is it significant to evolve relationships with aboriginal peoples when discussing forestry? Answer Key: it is because 5.6% of Canadian population claims some aboriginal ancestry. Of those, approximately half live off reserve, and the ancestral lands of many First Nations communities include significant amounts of forest.	Answer is partially correct, but topic may be included in the final exam.
181	Q:Most of the wood in a tree alive or dead? Why? A:Of a dormant mature tree, only 1% is biologically living, while is composed of dead.	Answer does not follow assignment criteria, but topic may be included in the final exam.
182	Q: What are the three components that make up sustainability? A: The three components that we need to consider when determining sustainability are economic, environmental and social aspect.	Answer does not follow assignment criteria, but topic may be included in the final exam.
183	Q: How are forest ecosystems beneficial for the climate? A: Forest ecosystems benefit the climate in multiple ways. They store large amounts of carbon, regulate humidity and temperature, and helps control air quality (pollution).	Answer is incomplete, but topic may be included in the final exam.
184	Question: What is the difference between autogenic and allogenic change? Answer: Autogenic change are without outside influence. Allogenic change are with outside agent.	OK
185	Is basing a decision on anecdotal evidence science based? It is not, because anecdotal evidence does not provide actual evidence or facts; it is just a story. It can, however, provide the grounds for further research so that it can become science based. But the original anecdotal evidence is not enough.	This topic was not covered in lectures, so this question will not be included in the final exam.
186	what is respiration? Cellular respiration is a set of metabolic reactions and processes that take place in the cells of organisms to convert biochemical energy from nutrients into adenosine triphosphate, and then release waste products. The reactions involved in respiration are catabolic reactions, which break large molecules into smaller ones, releasing energy in the process.	Answer is incomplete, but topic may be included in the final exam.
187	Q: What is silviculture and what are its primary uses? A: Silviculture is a series of activities linked together for meeting a set of objectives. Its primary uses consist of: Timber, Wildlife Habitat, Water, and Aesthetics.	Answer is partially correct, but topic may be included in the final exam.
188	What are the biological issues? Answer : The biological issues are insects, diseases, fire and animals.	Question and answer do not follow assignment criteria, but topic may be included in the final exam.
189	Question:Why is the area of land desertification increasing now, how	Question is incomplete,

	should we deal with it? Answer: There are eight deserts and four large sandy areas in China, along the south along the river, along the river and along the coast. In response to the problem of desertification, China has implemented many measures to prevent, such as through afforestation, to prevent desertification. However, artificial factors such as indiscriminate mining and deforestation have kept the land desertification area expanding	but topic may be included in the final exam.
190	Q: Did Leopold think that more education was enough to solve the problem? A: Although Leopold believed that education would be effective in the promotion and the implementation of the principles of the land ethic, Leopold states that educators were deficient in teaching proper values and content rather than the amount. He also believed that the values of the land ethic would have to be incorporated into religion and philosophy to be effectively implemented into society.	OK
191	List the three major regions in Peru and where are coffee plantations in Peru usually located? Answer: The sierra, the costa, and the Selva. Coffee plantations are found in the selva region.	OK
192	What are the similarities and differences between tropical seasonal forests and tropical rainforests? The tropical seasonal forests are similar to the tropical rainforest in terms of temperature, growing season and the diversity of species composition. The difference is that tropical seasonal forests have distinct dry and wet seasons while tropical rainforests have no dry season. Some trees in tropical seasonal forests lose their leaves during the dry season while trees in tropical rainforests are evergreen.	OK
193	What are the two main animals and their effects on Canada's forest and forestry? Woodland Caribou, their habitat is damaged and fragmented due to human disturbance, and main danger is increased predation and disease due to an increased population of deer, moose, and elk. Marbled Murrelet, a small seabird of the auk family found in North Pacific from Alaska to south-central California, is often a 'flagship' species in the forest preservation movement. Their population declines due to loss of nesting habitat, predation and climate change in the southern portion of its range.	OK
194	Q: What is a seed orchard? A: A seed orchard is an intensively managed plantation of specifically arranged trees for the mass production of genetically improved seeds to create plants, or seeds for the establishment of new forest	Answer does not follow assignment criteria, but topic may be included in the final exam.
195	What is a silvicultural system? There are two kinds of silviculture, one is architecture and the other one is engineering. The silviculture system is a series of activities that link together for meeting a set of objectives. Also the goal of silviculture is to produce goods and services that the landowners and society in general desire.	Answer is partially correct, but topic may be included in the final exam.
196	Q: Describe the four trophic levels. A: Level 1: Plants and algae make their own food and are called primary producer. Level 2: Herbivores eat plants and are called primary consumers. Level 3: Carnivores	OK

	which eat herbivores are called secondary consumers. Level 4: Carnivores which eat each other are called tertiary consumers.	
197	What are even-aged and uneven-aged stands? Even-aged stands are comprised of trees that are predominantly the same age that originate following a stand-replacing disturbance. Uneven-aged stands are comprised of trees of several ages originate following disturbances that kill some of the trees.	OK
198	Question: Describe two characteristics of the soil in tropical forests? Answer: One characteristic of soil in tropical forests is the deep weathering. The other characteristic is litter accumulation in organic matter.	Answer is incomplete, but topic may be included in the final exam.