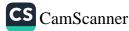
Juestion no: 07 Biodiversity - Causes Effects, Solutions Introduction : Biodiversity - is defied by the world Healin organization as; It underpris all life an Early and refers to biological variety in all its forms from the genetic maleup of plants and animals to cultural diversity. Biodiversity is measured by two comparents; a) Species sichness 6) Species evenness a) species richness: It is the reasure of the minder of species found in a community Tropical rainforment in the temestical ecosystem and coral reefs, in the marine Ceosysten have the highest degree of Speies sichness



b) Spaies evenness: It is a measure of the relative abundance of the different species making up the richness of the area Example; Sample A fast A has 2 tigers, 5-dees, and 6-rabbits and the sample B forest has 1 Typer, 6- deer, and 8-rabbits. Both Samples have the same richness (3- Spenes Aperes sichness) and the same total number of individuals. Havever, forest A has more events than the ferest B. low evenness midicates that a few Speses demiate the life. 0)) Nature of Biodiversity: Beta diversity Alpha diversity - comparison of diversity =) refers to diversity within between evorystems a particular area or



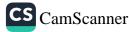
usually nearwead as we ecosystem usually change in the number of expressed by the number Species between the of species in that Crosystems. ecosystem. Gamma diversity: It is a measure of the overall divenity of the different ecosystems within a region. Alt is the total number of genetic characteristis in the genetic makeup of a species. Genetic diversily Hallows species to adapt to 000/ changing environment. A priver that some spailes survive drastic changes, and thus camp on desirable gene. stiste of are species Species diversity Population ore total number of organisms across all speces in the given bine. a measure of the diversity within an ecological community that incorporates both species richness and species evenness.



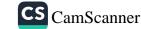
02) Causes for the loss of biodversi Natural ecological disturbances such as weather, wildfie, plods, and voleani eneptia change ecosystems doastically by elminating clocal population of some species. Such disturban are temporary because natural disturbances are cannon and crosystems have adapted to their challenges (evological succession). Permanant biodiversity loss is typically associated with mass extinction wents and anthropogeni evological changes all iterse there are four major antiropogenic causes for the fors of biadnessity. The Ful Quartet. Habitat loss Oreiexploitatia. Alien pares. Secondary extinction time is a sing a) Habitat loss: This is the most impostant cause of driving anicals and plants to extintion. wetlands are being made day through landfills as the demand of land increases.



the most dranatic examples of habitat loss care from topical ranforests. - Once covering more than 14% of the each's land's Surface, these rainfaserts now cover no more than 6%. Amazon rai forests lialled as the lung of the planet), is being cleared for cultuating Soyabean or for concerion to grasslands for raising beef cattles. b) Over-exploitation: when human needs turn to gread it leads to overexploitation of natural resources. In the last soo years, many speces extinction was due to averexploitation by humans. tressie cutting of trees, overgrazing, colletia of frewords, hunting of wild anical, fer Shin leg tiges) all result in gradual loss of species. C) Hier Species Invasion: Invasire alien speres are man mative species that spread and interfere in a new



Crosystem by posing a serious threat to the native bioducerity leading to economic lors. they are the Second most biggest cause for beddiesity loss, next to the habitat destrution. tor example, the Nile Perch fish introduced into Lake vectoria in East Africa, ded eventually to the extinction of an evologically unique assemblage of more than 200 species of cichlid fish in the lake. Secondary d) Species extinution: Various processes led to the extinction of species; ro deterministi procenes_ that cause have and effect, egg glavation human lite ference ~ stochastic processes _ affect the survival and reprodution of wedividuals - eg unexpected changes in the weather pattern diseases, increase of competitition predatory Or paraistle etc



03) Consequences of loss of biadiversity: w Affets livelihoods: Human health depends on evosyster produits and services changes in ecosystem services affect liveliheads, income, local nogration, or may even cause & exacerbate political carflict. iii) Human-animal Canflict. It refers to the interaction between wild annials and people and the negative apart a people and or their resources, or wild animals of their habitat. It occurs when to wildlife needs arealap with these of human population. for instance, Himalian mon leopard preys on goats in the Himalyon region fames trap and hills man leopards to save their life Stoch. (iii Increased zoonoses due to habitat loss: halping have Zoonoses are diseases transmitted from annials to humans.



e-g Rabies (dogs), Ebala (puit bats) and novel Coronavirus (Pangolii) etc. 200noptic diseases are interliked with the health of on econystens Acording to the UN - Environment Rogramme, 60% of human infectious diseases are Roonotic. 04) Solutions for biodiversity loss: Biodiversity Conservation: Conservation of bigdiversity leads to the Conservation of eventual eulogical diverty, to preserve the cartinuity of food chains. It arrives sustainable utilization of potential resources and constant flow of evorysten services and goods. a) In-situ conservation: It is the on site conservation of gretie resources, in the natural population of plants or annual speces is Reserved and protected facents: In rerened frests, right to all ativities are tanned unless specific orders

CS CamScanner

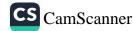
are usued In protected forests, iguts to activities like hunting, grazing are given to commun living a the finges of the facts. Other in site consevation methods are; A matianal party ~ wildlife sanchranies ~ P Community Beeres A Jacred grooves b) Ex. situ conservation: In this appoach, threathed and plants are taken out from natural habitat and placed, in Unique where they can and guen Speial care 200 logical parts botanical garden wildlife Safar party and seed banks Sleve this pupper a very well composed and satisfactory good examples and good use of syllabus always ans like this using the terms and points from syllabus good work 1420



Juestion no:04 Era of global bialing Introduction: Atmosphere gases like cabon dioxide methan netrous onicle, water vapaus and chloopfuosocalbais can trap the art going in frared radiations from the Each's serface thereby causing greenhouse effect. These gases of are not checked can by the turn of the Criting, will cause the temperature to use by se. Special reports have been prepared a the topic subas regianal imparts of climate changes and the global climate System. IPCC devided in 2016 to prepare three Special repolts; a) special report on global warming of 1.5°C (.SR 1.5-2018) use marker for facts and figures b) Special report on climate charge and Land (SRECL-2019)



() Special report on the arean and leyosphere is a changing climate change · (SROCC - September 2019) Special report on Global warming of 1.5°C CSR1.5_oct 2018): A SRIOS said it was possible to keep the rise in temperature within 1.5°c if the world could weep would bring down its GHG emissions to half of its 2010 levels by 2030 and to net 2000 by 2050. A at the current rate of emission, of the world is set to breach the limit of 1-Sc between 2030 and 2050. A Net-zero is achieved when the total emissions is balanced by the amount of absorption of the through matural rister or reneval of Cor through technologica' interestay. Impacts of Global Warning: that led to global boiling: is Increased frequency of heatwaves: the unpresedented heatwares which



has claimed hundreds of lives in British columbia and neighboring washington and oregon states, is the latest in the graving list of extreme weather events. Australia (2019-20) and California Serbiahave all recently experienced deadly wilds caused by extreme beaturares. ii) Increased incidence of wildfres: Increased incidence of wildfies creates a positive feedback loop exacelating global warning. Although weldfines on permapost in Serbia Soule of the Arche are not uncommon Rut in 2020, burning occurred all are above the Aretic Circle (hindra), a region not normally known to support large wildfies. (iii) Sea-level changes: world meterological organization (umo) has hinted at global worning as a cause of current increase in



Sea surface temperatures. IPCC report warns sea fevel could reach 60 to 110 cm if enissions cartinue to ingrease strongly In 2019, Indoresia's Bridert Joko widodo announced that a country's capital would be relocated from Jaharta to the province of East Kalimantan on the lessel populated islands of Borneo. is Tropical cyclones- becoming more severe: the fequent high intersity storms have been tied to the very warmin hea surface temp ceatures. the increasing Ollan temperatures gave née to devostating Ida: Cyclone & March 2019 in the South-west Indian Ocean basin. Extremely serves cyclone stom tane (April 2019) y andras strongest upoil cyclone in 43 years Now, lue trabian bea is started receiving topical cyclones of high intersity in a small time interval. In 2019, Storn Vayie occurred in the tration sea in the marin of fuce.



V) Climate migrants: · migration due to chirate charge into such as sea lad rise floods draight etc. According to world where report -2020; Africa is identified as a hotipot viherability. vi) other impacts: a) Economie damages: the amanie forses suffered due to the emission of one torm of co, into the atmosphere. US economic damages would be \$48 per torm of cu ension. 6) Bio diversity loss: Loss of Planliton and bleaching of constreefs will cause a great loss to manue bioduersity. Measures to lessen impacts global boiling: 1. Clean coal technology to reduce co emission: Half of the world' electrical, is gherated by burning coal, and will renain Source for years to come. a dominant every



Clean coal tehno logy sech to redue the hash Environmental effects by using multiple tehnologies. Systems like electrostatic prespittors, coal garification vet sembless, or low Nox burness can reduce the emission of hampel gases.

(ii) Carbon kinks and carbon sequestration: Caeba suits is a matural or artificial reservoir that accumulates and stores some lacton containing compainds. The process by which carbon sinks senere 102 from the atrusphere Es carba seguestration. Carbon sinks help to tackle the challenge of climate energhny.

(iii) Geoengineering to fight climate change: the Oxford Geoergineering Bugrame depes it as we deliberate large reale interrentian in the Earlie's natural systems to counterait climate change. technologies melude managing lotar radiation removing confirm atrophere, afforstation etc.



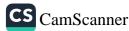
ing christe- Smart cities: Chiale-small refers to an integrated approach to managing landscapes and ecosptens to address interlisted challenges sustainable development and global Making citles mare resilient, justaniable inclusive and safe is ane of the United Nation's Justavable developmental goals () Transition to green economy: livee printies to transition of economy to green economy are: Decarbanising the economy Connot the Environment at community to jutic and equity Consene tre biosphele. vi) Transition away from the coal: IPCC established that a lose consertent trajectory requires coal-powered electricity to drop to less than 1% of the global electricity nex by 2050.



one poposal is to phase aut the oldest coal plants first. This would phase out coal in developed and developing finners at a 14/20 differentiated Late. well done Current phase-art efforts: A the UK plans to shut down all unabated" coal fired electricity by 2050. a Germany frialized a plan to shiet down all coal power plants by 2038. A France and Staly have also made sincle political constructs. Question mo: 08 wetlands : vetlands are areas of marsh or peatland with water that is static or flaring, fresh, salue including areas of manie water, the depth of which at low tides dues not exceed 6th. wellands are transition zones between terrestral and aquatic everystens. these habitats experience periodic flording for adjacent deepwater habitats and therefore



& plants and animals specifically adapted to shallow flesding or water hogging Impostance of wetlands: a vetlands are indispensable for the countless barefits that they provide humanity, ranging from freshwater supply, food and building natriab. A wetlands are habitat to aquatic flora and fauna numerous species of and nigratory birds. a hay cany out water purification of sedments and nutrents from water. A Play an important sale in flood nitigates by cartolling the date of moff. A lucy ait as grieti reservoir for various species of plants nie). A trap help in nutrent scycling. A Buffer Shorelies against Colia and pallitants.



Reasons for the depletion of wellands. Excessive pellutants are dimped wetlands beyond the rending capatit > Habitat destruction and deforestation create ecological inbalance by altering the population of wetland species A Overgrazing in marshy soils Overfishing and fish farming A a Conversion of wetlands for agriculture and encoachment by public and mapia. A Reneval of sand from beds near seas makes the netlands vulnesable to wave action and tedal bose. 4/5ans are very well composed with a relevant good data ans satisfactory but work on time management

