KOLEKSI SOALAN KBAT BIOLOGI 2015

Soalan 11/16

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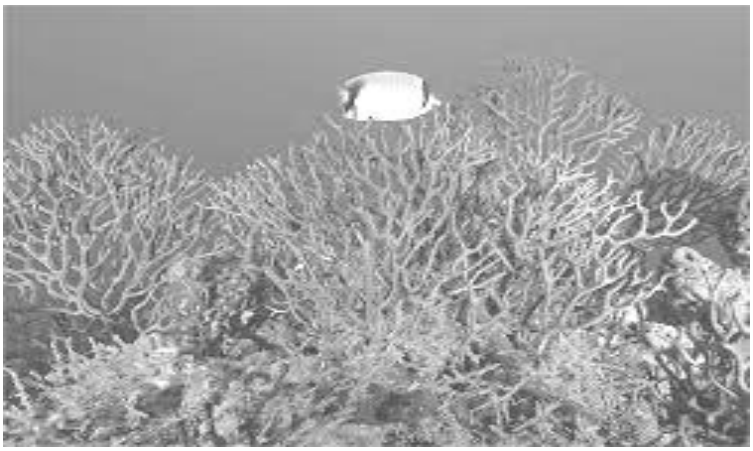
Answer scheme translated by SPM Soalan

Soalan11

Suatu ekosistem terdiri dari komuniti pokok,haiwan dan organism bersaiz kecil yang hidup, makan, membiak dan berinteraksi sesame sendiri atau dengan persekitaran. Sesetengah ekosistem adalah sangat besar.Contohnya, banyak sarang sepsis burung di satu kawasan dan makan di kawasan yang berbeza. Selain itu,sesetengah ekosistem mungkin secara fizikalnya kecil,contohnya terumbu karang di lautan seperti ditunjukkan dalam Rajah 1.

An ecosystem is a community of plants, animals and smaller organisms that live, feed, reproduce and interact in the same area or environment. Some ecosystems are very large. For example, many bird species nest in one place and feed in a completely different area. On the other hand, some ecosystems may be physically small, such as in a coral reef in the ocean shows in Diagram 1.



Rajah 1
Diagram 1

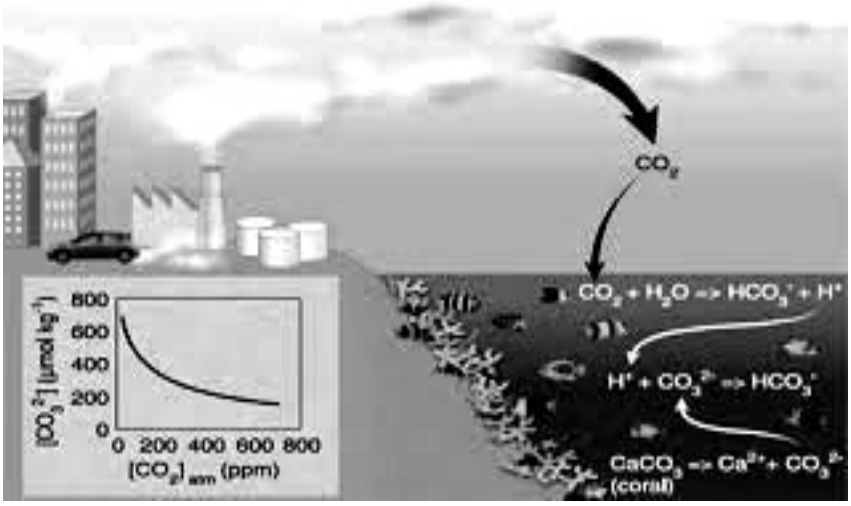
(a)Berdasarkan Rajah 1, bolehkah anda kumpulkan organism berdasarkan Komponen biotic dan bukan biotik?
Based on Diagram 1,can you group the organisms according to the biotic and abiotic component?
Aplikasi[3 markah]

(b)Bina satu jalinan makanan bagi ekosistem laut tersebut.
Construct a food web of the ocean ecosystem
Sintesis[2 markah]

(c).Pada pendapat anda, apakah kemungkinan kesannya kepada ekosistem laut jika Tiada terumbu karang?
In your opinion, what are the possible consequences to the ocean ecosystem if there is no coral reef? Menilai[10 markah]

Kesan aktiviti manusia terhadap ekosistem termasuk kesan terhadap persekitaran biofizikal ,kepelbagaian, dan sumber-sumber lain. Walau kebanyakan pakar bersetuju bahawa manusia telah mempercepatkan kadar kepupusan spesis,mungkin 100 hingga 1000 kali berbanding latar belakang kadar kepupusan yang normal. Kesan terhadap terumbu karang adalah ketara.Terumbu karang semakin berkurangan di seluruh dunia. Jelasnya, pengambilan karang, pencemaran, penangkapan ikan secara berlebihan dan menggali terusan dan laluan ke pulau dan teluk telah mengancam ekosistem tersebut. Terumbu karang mengalami bahaya yang besar dari pencemaran, penyakit ,mengamalkan penangkapan ikan yang berleluasa dan peningkatan suhu air laut. Rajah 2 menunjukkan satu aktiviti manusia yang mengancam ekosistem.

Human impact on the environment includes impacts on biophysical environments, biodiversity, and other resources.Though most experts agree that human beings have accelerated the rate of species extinction, perhaps 100 to 1000 times the normal background rate of extinction. Human impact on coral reefs is significant. Coral reefs are dying around the world. In particular, coral mining, pollution, overfishing, blast fishing and the digging of canals and access into islands and bays are serious threats to these ecosystems. Coral reefs also face high dangers from pollution, diseases, destructive fishing practices and warming oceans. Diagram 2 shows one of humanactivities threaten the ecosystem.



Rajah 2
Diagram 2

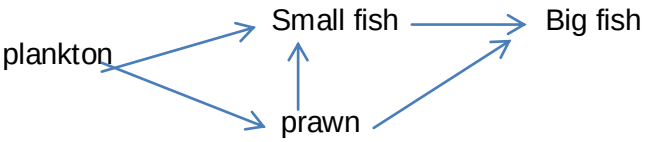
(d) Bincangkan kesan aktiviti manusia terhadap ekosistem.
Discuss the effects of human activities to the ecosystem.

Menilai[6 markah]

(e) Pada pendapat anda, apakah yang akan berlaku kepada organism hidup dalam Ekosistem jika aktiviti manusia terus dibangunkan?
In your opinion, predict what will happen to the living organism in the ecosystem if The human activities continue to develop? Menilai[3 markah]

Sample Answers:

<table>
<tr><th>Number</th><th>Sample Answer</th><th>Mark</th></tr>
<tr><td>1(a)</td><td>
<table>
<tr><td>Biotic component</td><td>Abiotic component</td></tr>
<tr><td>Fish/ikan</td><td>Oxygen content/kandunganoksigen</td></tr>
<tr><td>Coral/batukarang</td><td>Temperature /suhu</td></tr>
<tr><td>Plankton/plankton</td><td>Light intensity/keamatancahaya</td></tr>
</table>
</td><td>3</td></tr>
<tr><td>(b)

(c)</td><td>Food web:
 

consequences if there is no coral reef:
-water cannot be filtered /air tidakdapatdituras
-fish reproduction lessen /pembiakanikanberkurang
- no shore line protection/tiadaperlindunganpersisirpantai
- erosion cannot be prevented/hakisantidakdapatdielakkan
-cannot reduce wave/tidakdapatmengurangkanarus
-cannot buffer the shores/tidakdapatmenimbalpantai
- unable to stabilize mangroves and sea grass beds/ Tidakdapatmestabilkanbakaudanrumputtepilaut
-unable to maintain balanced relationships between predators and prey and organisms in competition for the same resources/ Tidakdapatmengekalkankeseimbanganhubunganantaramangsa-pemangsadanpersainganantaraorganismauntukmendapatkansumbermakanan
-unable to keep our marine ecosystems diverse and abundant with life./ Tidakdapatmengekalkankepelbagaianekosistemmarindanpelbagaihidupan
-no source of protein/tiadasumber protein
-no tourist attraction/tiadatarikanpelancong</td><td>2

Max=10</td></tr>
<tr><td>(d)</td><td>effect of human activities to the ecosystem:
-water become acidic/reduce the pH of water//acid rain
Air menjadiberasid/pH air berkurang//hujanasid
-water pollution//air pollution
Pencemaran air//pencemaranudara
-aquatic organisms die/akuatikorganismamati
-loss of valuable species/hilangspesisberharga
-loss of habitat/habitat hilang
-upsets oxygen and carbon dioxide balance
Menggganggukeseimbanganoksigendankarbondioksida
-reduce water resources/sumber air berkurangan</td><td>Max=6</td></tr>
<tr><td>(e)</td><td>- living organisms/aquatic organisms die/</td><td></td></tr>
</table>

	Organisma hidup /akuatik organism mati - become extinct//loss of valuable species/ *Mengalami kepupusan // hilang sepsis berharga* - ecosystem imbalanced / *ekosistem tidak seimbang* -food web//food chain disrupted/ *Jalinan makanan//rantai makanan terganggu*	Max=3