

# **Virtual University of Pakistan**

**BT401**

## **Genetic resources and conservation**

**Final terms Past Papers**

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## BT-401 SOLVED MCQ'S

### Quiz\_II & Final Term MCQ's

1. The main objective of Category V is..... maintain a balanced interaction of nature & culture.
2. Which Category area are not necessarily associated with presence and intervention..... Category-IV
3. Main objective of Habitat-Species Management Area is..... Option d
  - a. to maintain species b. to conserve species c. to conserve & maintain habitat d. all of these
4. Sir Saqiq Muhammad Khan Abassi established..... Bahawalpur Zoo
5. Which specie has been reintroduced in Lal Suhanra National Park..... Black buck
7. Ramsar convention was negotiated\_\_\_\_\_by countries and NGO's.....1960
8. WCPA stands for.....World Commission on Protected Areas
9. Which of the following category encourage the conservation of aquatic biodiversity..... Category-V
10. Hingol National Park was declared reserved in.....1988
11. Which of the following is largest national park of Pakistan.....Hingol National Park
12. Large Natural areas comes into..... Category VI
13. Ramsar came into force in..... 1975
14. Total Ramsar sites are\_\_\_\_in Pakistan.....19
15. Bahawalpur zoo cover..... 25 acres
16. In Game reserve the major focus is specially the .....animals
17. Market value of non-wood goods from forest

17. Market value of non-wood goods from forest at..... €2.3 billion
18. Climate has direct effect on.....FGR
19. Trigger for migration..... all of these
  - a. local climate b. local availability of food c. for mating reasons d. all of these
20. There are\_\_\_ type of Genome transfer.....2
21. \_\_\_\_ rupees will be fine for cutting tree in 1992 act.....5000
22. Cartagena Protocol on Bio-safety.....2001
23. Convention on biological diversity.....1992
24. Dolphin is a.....Mammal
25. 21% out of 5,488 mammal species & 12% out of 9,990 bird species are considered to be endangered.
26. Since the 1970's the population of Indus dolphin has significantly increased here.
27. Animal Genetic resources..... option d (all)
  - a. animal genetic resources for food & agriculture b. farm animal genetic resources c. livestock biodiversity d. all
28. If hunting is prohibited, a game reserve may be considered a ..... Nature Reserve
29. National geological and geomorphological features..... waterfalls
30. Seaweeds population..... 13 000
31. Snow leopard population.....300
32. Land race also called.....weeds
33. \_\_\_\_are the link from generation to generation of all living matter..... Genes
34. PGRFA assets; facilitate to access to needed genetic materials and govern the sharing of the accruing benefits; add value to them through crop improvement; and sustainably intensify crop production as may be needed.



35. The 1st report on fish sperm cryopreservation was published by Blaxter..... (1953).
36. Vegetative propagation is alternative to.....Tissue culture
37. Using microarray analysis, detected that up to \_\_\_\_ genes were significantly induced by drought in two Mediterranean pine species.....113
38. FAO stand for..... Food & Agriculture Organization
39. GEWIS stands for..... Genome wide interaction scan
40. Number of laboratories on plant genetic resources in Pakistan.....6
41. Genetic variations are variations due to..... Genes
42. Reproductive isolation is.....Sympatric
43. Ensure a light intensity in the range from 10 to 1000  $\mu\text{mol S}^{-1} \text{m}^{-2}$ .
44. Species extinct till yet..... 5 billion
45. Gene bank is a type of.....Ex-situ Conservation
- 46: Areas of great genetic diversity are protected from human interference..... Gene sanctuary

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### Quiz\_I & Mid Term MCQ's

47. PGRFA stands for.....plant genetic resource for food and agriculture
48. NCCP stand for.....National cultural collection of Pakistan
49. Conservation of plant genetic resources is necessary for..... Option d
- a. food security b. Agrobiodiversity c. Commercial use d. both a & b

50. Deleterious mutations are called



50. Peste des petetis ruminants also called.....  
sheep & goat plaque
51. According to FAO species of molluscus are approx;  
..... 85000
52. GSPC was found in..... 1999
53. Which disease was spread by consuming mercury  
poisoned fish..... MINAMTA disease
54. Plant diversity is urgently and effectively conserved  
is an objective of..... GSPC
55. Woody plants like trees have\_\_ Genetic diversity  
than vascular plants like grasses..... Higher
56. Genetic stocks can be divided into \_\_ groups.....  
3
57. Pakistan is the \_\_ largest producer of Kinow and  
oranges in world..... 6th
58. Sheep were domesticated by humans  
around..... 10,000 BC.
59. A\_\_\_\_\_ can be taken to analyze G cross E  
interactions..... polygenic approach
60. \_\_\_\_\_causes advantageous genes to be removed in  
the following generations.....Genetic drift
61. \_\_ is an example of daily migration..... Crow
62. \_\_\_\_\_ be through sexual or asexual  
reproduction..... Vertical gene transfer
63. \_\_\_\_\_ is an example of Allopatric speciation.....  
Darwin finches
64. \_\_\_\_ produced by dart-poison frog..... Toxins
65. Sterculia khasians is endemic tree of the.....  
Khasi hillss
66. OHSS is..... Ovarian hyper stimulation syndrome
67. Genetic resource is..... first resource
68. Himalayan brown bear..... 150-200
69. Cryopreservation in liquid nitrogen..... -196C
70. Special care unit..... Ex-situ

- 70. Special care unit..... Ex-situ
- 71. Closely related individuals..... inbreeding
- 72. Microorganisms.....diverse
- 73. National strategy of PGRFA may help..... Country
- 74. Crustaceans migrate for..... breeding/mating
- 75. Phenyl ketonuria caused by..... Mutations
- 76. Genetic drift effects on storage in..... small population
- 77. More genetic variations in population.....Natural selection
- 78. Coral reefs are home of marine animals.....25%
- 79. Earliest modern protected areas..... yellow stone n.p
- 80. *C. calypha rubrinervis* belongs to family..... Euphorbiaceae

## Questions

### **Impact of climate change on fgr? 10**

Ans: Climate change may also result in high variability in temperature and precipitation, with an increase in incidence of extreme events, such as flooding, late frosts and intensive summer droughts, amongst other events. In some areas, such as the Mediterranean and the Neo-tropics, an increase in seasonality is also expected. Under such conditions, natural selection may not result in efficient adaptation because selection pressures are multi-directional, involving traits that may be inversely correlated at the gene level. The standing genetic variation in populations may then not be large enough to create the rare new genotypic combinations that are required. Ecosystems affected by abrupt change may sustain rapid and widespread transformation as ecological tipping points are



exceeded. Given the pivotal role of trees in ecosystem function, abrupt climate change impacts on them may thus have profound consequences for forests as a whole. Irreversible loss of ecosystem integrity and function may follow, with replacement by new non-endemic ecosystems.

### **Direct impacts of climate change**

These include high tree mortality through extreme climatic events, particularly drought in

combination with widespread regeneration failure, for example, examined the evidence for anthropogenic climate change leading to future large-scale “dieback” in Amazonian rainforest.

Analysis suggested that dry-season water stress is likely to increase in eastern Amazonia over

the 21st century, with the region tending toward a climate more appropriate to seasonal

forests.

### **Link between climate change and botanical garden? 5**

Ans: plants can alter the temperature of the Earth’s atmosphere. Through the process of photosynthesis, plants use energy from the sun to draw down carbon dioxide from the atmosphere and then use it to create the carbohydrates they need to grow. Since carbon dioxide is one of the most abundant greenhouse gases, the removal of the gas from the atmosphere may temper the warming of our planet as a whole. \*transpiration in plants can increase water vapor in the atmosphere, causing more precipitation and cloud cover in an area. The additional cloud cover often reinforces the cooling by blocking sunlight.

\*Contribute to soil fertility and prevent soil erosion

### **Three pillars Ramsar site? 5**

Ans: The Contracting Parties(160)commit to: • Work towards the wise use of all their wetlands. • Designate suitable wetlands for the list of Wetlands of

International Importance. • Cooperate internationally on transboundary wetlands, shared wetland systems and shared species

### **Define strict nature reserves? 2**

Ans: Protected areas that are strictly set aside to protect biodiversity where human

visitation, use and impacts are strictly controlled to ensure protection of the conservation values.

### **Biodiversity of habitat species management area?**

Ans: Category IV areas are important for their role in 'plugging the gaps' in conservation strategies by protecting key species or habitats in ecosystems. It provides a management approach for areas that have already undergone substantial modification, necessitating protection of remaining fragments for identified target species with or without intervention.

### **Define phenotypic plasticity?**

Ans: "Phenotypic plasticity is defined as the capacity of a particular genotype to express different phenotypes under different environmental conditions."

A degree of phenotypic plasticity is found in most trees, but varies substantially amongst and within species. Even in species with very little genetic diversity, such as *Pinus pinea*L, strong phenotypic plasticity is expressed for growth related traits, which may have helped the species colonise new environments

### **Pakistan terrestrial water and maritime zoon act?**

Ans: ☐ It includes provisions for preservation, development and protection of marine



environment

☐ This law controls marine pollution and exploration, development, conservation and management of living resources in Pakistan's Exclusive Economic Zone (EEZ)

☐ This law means that a ship carrying nuclear and hazardous substances will have to inform the Government of Pakistan.

### **Effect of weather on invertebrate?**

Ans: Climate change is expected to affect all three of the main groups of invertebrate

ecosystem-service providers as well as invertebrate pests. Invertebrates have limited ability to control their body temperatures. Therefore, although some groups such as soil-dwelling organisms are to some degree buffered against the effects of temperature fluctuations in the wider environment, it is likely that rising temperatures will directly influence the distribution of invertebrate species. Many of the challenges associated with the management of invertebrate genetic resources in agriculture in the context of climate change will relate to climate-driven or human-assisted movement of invertebrate species. Most invertebrates are expected to change their geographical distribution

in response to climate change so as to remain in areas to which they are well adapted.

This view is strongly supported by sub-fossil evidence of insect distribution during the glaciations and interglacial periods of the Quaternary Period.

The current world is very different from that of the early Quaternary Period.

Human activities have created barriers to the migration of invertebrate species.

These barriers are likely to affect species in natural ecosystems rather more severely than those associated with agro-ecosystems. The movement of the

latter is likely to be facilitated rather than hindered by human-induced landscape changes. In situ adaptation of invertebrate species is expected

to be most marked where movement is not an option (e.g. on low, isolated islands).

It is very difficult to predict how the combined effects of changing temperatures, changing rainfall patterns and elevated carbon dioxide levels will affect invertebrates and their capacities to provide ecosystem services or to act as pests. As yet, few studies have attempted to investigate interactions of this kind. Further complexity is added by the prospect that the other components of the ecosystem with which invertebrates interact – food plants, micro-organisms, etc. will also be affected by climate change.

It has been suggested that, in the future, parts of the world will have novel climates that have no current equivalent anywhere on the planet. This will inevitably lead to novel associations among invertebrate species and novel effects on agriculture.

The consequences of such changes are difficult to predict.

Extreme weather events such as heat waves, droughts and floods – which are predicted to increase in frequency due to climate change – are often followed by pest outbreaks. Among other contributing factors, these outbreaks can occur because the extreme event eliminates or weakens a pest's natural enemies.

Warmer, shorter winters will mean that many invertebrates become active and start reproducing earlier in the year. Some species may be able to produce additional generations of offspring in a single year, which in the case of

herbivores can have a major impact on host plants. Similarly, warmer winters may mean that pests are able to establish themselves in areas where they have not previously caused problems. The capacity of locally occurring natural enemies to respond and keep these pest populations under control may be in doubt

Climate change is expected to have a profound effect on soil invertebrates and the services they provide. Temperature is a key factor regulating many of the biogeochemical processes in which invertebrates participate or by which they are affected, including soil respiration, litter decomposition, nitrogen mineralization and denitrification.

Studies have shown that both elevated temperatures and elevated carbon dioxide levels affect the abundance of invertebrate species and the composition of soil communities. Some species are better able to adapt than others. For some invertebrates, the ability to migrate down the soil profile to cooler and moister levels will offer an important survival strategy.

### **Name the physical growth limitations in median term storage?**

Ans: ◦ Low temperature ◦ Low light/restricted photoperiod ◦ Minimal containment  
◦ Minimal O<sub>2</sub> ◦ Osmotic (water) stress

### **Objective of category 6?**

Ans: Primary objective • To protect natural ecosystems • Use natural resources sustainably, when conservation and sustainable use can be mutually beneficial.

Other objectives ☐To promote sustainable use of natural resources, considering ecological, economic and social dimensions; ☐To promote social and economic benefits to local communities where relevant; ☐To facilitate inter-generational security for local communities' livelihoods – therefore ensuring that such livelihoods are sustainable; ☐To integrate other cultural approaches, belief

systems and world-views within a range of social and economic approaches to nature conservation; ☐To contribute to developing and/or maintaining a more balanced relationship between humans and the rest of nature;

### **Name of second largest park?**

Ans: Kirthar National Park is the the second largest national park of Pakistan spread over an area of 3000 square kilometres. ☐ Kirthar was designated a national park by the Sindh Wildlife Department in 1974, ☐ This is the first of Pakistan's parks to be included in the UN's listing of National Parks of 1975 ☐ This is natural haven for Urial sheep, Ibex, Chinkara gazelle, ☐ Jungle cats, desert cats, occasional leopard, desert wolf also prowl the park.

### **Different variations of gene variation?**

Ans:

### **Assisted migration ?**

Ans: Assisted migration involves human movement of tree seed and seedlings from current locations to sites modelled to experience analogous environmental conditions in the future.

Assisted migration may be undertaken over long distances, or just beyond the current range limit of particular genotypes and populations, or within the existing range . A gradual form of assisted migration could consist of reforestation of harvested sites with seed from adjacent locations likely to be better adapted to the planting site under future climate (e.g., in the Northern hemisphere, using seed from sources to the south; in mountainous regions using seed from lower elevations).

### **Central goal of zoo?**

Ans: The zoo originally evolved from the menageries of the ancient world, in which royalty would exhibit their collection of exotic pets. ☐ Unfortunately not all zoos are scientific in nature, and extreme controversy has arisen regarding how the animals are treated. ☐ Suffice to say, regulation is necessary to ensure proper



care. ☞ Conservation (not exploitation) should always be the central goal behind any legitimate zoo.

### **Ramser site of Punjab?**

Ans: Punjab • Uchhali Complex • Taunsa Barrage • Chashma Barrage

Criteria of national park?

Ans: The criteria used to define protected areas vary widely, depending on the objective and on the mechanisms behind the establishment of the protected area. They are usually locations of significant environmental, cultural or natural value that in most cases have some form of management authority in place for their protection. For the criteria associated with different types of protected area, please see the relevant section in the areas under the 'Protected Areas' category.

### **Services provided by PEPA?**

Ans: PEPA provides for; • Protection, • Conservation, • Rehabilitation and • Improvement of the environment; ☞ PEPA provide framework for prevention and control of pollution ☞ Helps in protection of sustainable development.