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Grade	10.00 out of 10.00 (100%)

Question 1






Correct

Mark 50.00 out of 50.00

- 1 Protein interaction networks must be of directional nature. False  
- 2 Networks that only have undirected edges can be represented with symmetrical adjacency matrices. True  
- 3 The main topological characteristics of protein interaction networks as we currently understand them are (select all that apply):
- ☐ No   All nodes have a roughly similar number of interactions.
 - ☐ No   The network structure is vulnerable to random node mutations.
 - ☐ Yes   They have a small diameter.
 - ☐ Yes   There are regions within the network that more connected internally than to the rest of the network.
 - ☐ Yes   Edges represent physical relationships between proteins.
- 4 Select the tools that can be used for topological network analysis (select all that apply):
- ☐ No   g:Profiler
 - ☐ Yes   Gephi
 - ☐ Yes   iGraph
 - ☐ Yes   Cytoscape
 - ☐ No   BiNGO
- 5 In a protein interaction network, an internally inter-connected module ...
- ☐ ... can only be found in networks with directed edges.
- ☒ ... can represent a protein complex or a group of proteins with a defined biological function. 
- ☐ ... is also known as a hub.
- ☐ ... only has nodes with a low number of interactions.
- ☐ ... changes its intrinsic functional properties when placed in a different context.
- ☐ Blank answer


Mark 5.00 out of 5.00

The correct answer is: ... can represent a protein complex or a group of proteins with a defined biological function.

- 6 The degree of the nodes in a network can be considered as a local measure of centrality. True  
- 7 Annotation enrichment analysis is often limited in its usefulness due to the complexity and detail of annotation associated with large gene/protein sets. True  
- 8 The degree of a node can be defined as:
- ☒ The number of edges that connect to/from a node. 
 - ☐ The smallest number of steps between two nodes.
 - ☐ The number of edges in a network.
 - ☐ The number of nodes in a network.
 - ☐ Blank answer

Mark 5.00 out of 5.00

The correct answer is: The number of edges that connect to/from a node.

- 9 Transitivity...
- ☐ ... measures the number of hubs in a network.
 - ☐ ... measures the shortest distance between two nodes.
 - ☐ ... gives an estimation on how important that node/edge is for the connectivity of the network.
 - ☒ ... measures the tendency of the nodes to cluster together. 

☐ Blank answer

Mark 5.00 out of 5.00

The correct answer is: ... measures the tendency of the nodes to cluster together.

10 Annotation enrichment analysis uses gene/protein annotations provided by knowledge-bases such as Gene Ontology (GO) or Reactome to infer which annotations are over-represented in the network. True 