CPESC Australasia Practice Exam

The questions contained in this practice exam are for example purposes only to give candidates an idea of the topics and principles that are assessed in the CPESC exam.

Note that the ability to answer this practice exam does not mean you will be able to pass the CPESC exam.

September 2014

Multiple choice questions.

1. The pH of a soil describes:
   a. the required fertilisation
   b. the presence of trace elements
   c. the acidity or alkalinity of a soil
   d. the conversion of nitrogen into forms that plants can use

2. Most plants are useful for erosion control, but some are more desirable than others due to:
   a. lack of physical structure
   b. adaptability to physical and climatic site conditions
   c. rigid growth needs
   d. availability of seed

3. If vegetation is to be used to stabilise an area that will require maintenance (ie mowing), the preferred type of vegetation to plant would be:
   a. legumes
   b. grasses
   c. shrubs
   d. cereals

4. Which erosion control practice is the most effective in reducing slope length?
   a. slope drains
   b. benching
   c. contoured strips
   d. waterways

5. Rainfall erosion may be a problem in arid and semi-arid areas because:
   a. vegetative cover may be poor
   b. intense storms may occur
   c. both a and b
   d. neither a nor b

6. For a given amount of water, which has the more kinetic energy?
   a. rainfall at 10mm/hr
   b. water running off in rills
   c. rainfall at 100mm/hr
   d. water in a lake

7. The definition for “hydraulic radius” is:
   a. one half the distance between the top of a semi-circular shaped channel
   b. the length of the perimeter of a channel cross-section in contact with water
   c. the distance from a fixed point outside of an embankment that defines the curve of a channel
   d. the ratio of a cross-sectional area to the corresponding wetted perimeter

8. A wet area in a hillside, upslope from a construction site, may indicate:
   a. a clay layer somewhere below the surface causing a perched groundwater table
   b. there is no potential for slope failure
   c. the subsurface soils may be colluvium
   d. an abandoned gravel pit

9. In establishing an erosion and sediment control plan for a site, the planner/designer should:
   a. plan the site to fit the development
   b. set the limits of clearing and grading to the site perimeter
   c. establish the operation sequences clearly
   d. let the contractor set the maintenance schedule

10. A factor that can affect stormwater runoff volume is:
   a. the hydrologic soil group
   b. the time of concentration
   c. shallow concentrated flow
   d. the duration of flow

11. Turf reinforcement mats are used primarily:
   a. in medium to high velocity concentrated flow environments
   b. on steep, short banks
   c. on football ovals
   d. in table drains

12. Who in an organization can be prosecuted for causing environmental harm?
   a. the employee that caused the harm
   b. line managers
   c. the Executive Officer of the organization
   d. all of the above

13. An employee can best demonstrate due diligence by:
   a. reporting environmental harm to his/her supervisor
   b. reporting environmental harm to his/her work mates
   c. reporting the environmental harm to a government agency
   d. being aware of the organisation's environmental policy.

14. When specifying a legume in a seed mixture for revegetation, one should:
   a. test soil depth
   b. specify the legume inoculation rate
   c. hydro-seed the site
   d. seed at double the design rate

15. The primary purpose of a vegetated waterway is to:
   a. convert severely eroded areas to productive pasture production
   b. filter sediment from surface runoff
   c. transport surface runoff in a non-erosive manner
   d. divert surface water around gullies

16. Which one of the following sediment basin shapes has the greatest potential for being most effective in removing suspended particles for a coarse grained soil:
   a. a circular basin
   b. a square basin having a length: width ratio = 1:1
   c. a rectangular basin having a length : width = 6:1
   d. a rectangular basin having a length : width = 2:1

17. Sediment control measures should be:
   a. installed after site disturbance
   b. maintained throughout the life of the project
   c. inspected every six months
   d. dried out before cleaning

18. The collar on the underground portion of the discharge pipe in a sediment basin is:
    a. to stabilise the pipe
    b. to control seepage along the pipe
    c. to control the flow in the pipe
    d. to control settling of the pipe

19. Organic mulches are effective in doing all of the following except:
    a. reducing rainfall impact
    b. reducing moisture evaporation
    c. increasing nitrogen
    d. increasing surface roughness

20. Energy dissipaters in a channel are for:
    a. controlling upstream erosion
    b. reducing the outlet flow volume
    c. reducing the velocity of flowing water
    d. reducing the hydraulic potential energy

True/False Questions

1. Soils with a pH of 9 are acidic.
2. Straw bale check dams placed at intervals along channels are permanent erosion control measures
3. During development, land disturbances should be delayed until required by the next construction stage
4. Erosion and sediment control planning and implementation increase erosion and sediment control facility maintenance costs
5. To avoid soil erosion, all sites should be turfed as soon as work is completed
6. Polyaluminium chloride coagulants are suitable for use in acidic receiving environments
7. Generally, shorter times of concentration result in higher peak discharges
8. Sediment fences are made of nylon fibres with a slight positive charge which allows for bonding of clay particles
9. Hay bales are preferred over straw bales because they are more readily available and are more tightly packed
10. Erosion control is more effective than sediment control for reducing the overall sediment load in stormwater.