Indian Forest Service Examination-2012

D-GT-M-GSB

FORESTRY

Paper – II

Time Allowed : Three Hours | *Maximum Marks : 200*

INSTRUCTIONS

Candidates should attempt questions 1 and 5 which are compulsory, and any THREE of the remaining questions, selecting at least ONE question from each Section.

All questions carry equal marks.

Marks allotted to parts of a question are indicated against each.

Answers must be written in ENGLISH only.

Neat sketches may be drawn, wherever necessary.

IMPORTANT NOTE :

All parts/sub-parts of a question must be answered contiguously. That is, where a question is being attempted on the answer-book, all its constituent parts/sub-parts must be attempted before moving on to the next question.

Pages left blank in the answer-book(s), if any, must be clearly struck out. Answers that follow pages left blank may not be given credit.

SECTION A

1. Answer the following briefly and to the point : *8×5=40*

   (a) What are the items of information available in the volume table in addition to volume of tree ? Briefly describe them.

   (b) Describe process of tree height measurement by Abney level. What are its advantages and disadvantages ?

   (c) Describe various formulae for calculation of volume of logs.

   (d) Define Stem analysis and discuss its purpose.

   (e) Describe compound interest formula for calculation of diameter increment percent.

2. (a) Describe the indirect methods for volume estimation of trees. *14*

   (b) If the angle of elevation to the tip of the tree is 30° and 45° respectively, measured from two sides of a ravine, and width of the ravine at the top is 15 m and height of the eye of observer from the ground is 1·5 m, find the height of the tree. *8*

(c) Estimation of crown volume depends on which factors and what are the different geometrical shapes of crowns ? Write down the various formulae for measurement of crown volume. *10*

(d) What are the advantages and disadvantages of LANDSAT images ? *8*

3. (a) Calculate values of

(i) Bark thickness;

(ii) Log volume OB;

(iii) Log volume UB;

(iv) Volume of bark, and

(v) Bark percentage,

for a log with measurements :
DBH OB = 130 cm; DBH UB = 124 cm and Length = 4·8 m. *10*

(b) Describe the structure of Dumpy level through a well labelled diagram. *10*

(c) Discuss the Metzer's theory of Stem Form. *8*

(d) A tree with elliptical c/s when measured at BH by a callipers gives two values as 71 cm and 65 cm. Girth of the tree at BH by tape is 1·82 m. Calculate the basal area by three different methods, listing the methods clearly, and discuss which method is the correct one. *12*

4. (a) Discuss the "Two-Point Problem" – the special case of resection in Plain Table Survey. *12*

(b) Describe the limitations and advantages of Plane Table Survey. *8*

(c) What shifts in attitude among Forest Personnel from the present are required for better success of Joint Forest Management ? Discuss. *10*

(d) What are the set of tools used in Rill method ? Briefly highlight their features. *10*

SECTION B

5. Attempt the following, keeping your answers brief and to the point : *8×5=40*

   (a) Describe Section (2) of Forest Conservation Act of 1980.

   (b) List the Pioneers flora of sand dunes under :

      (i) on dunes,

      (ii) spread out sand, and

      (iii) stabilized dunes.

   (c) Describe various types of grasslands mentioning the associations of grasses and their environmental locations in the different regions of India [as described by Whyte (1957)].

   (d) Describe flora and distribution of Group : 16 C1 of Champion & Seth's Forest Type.

   (e) Describe Raunkiaer's Life forms.

6. (a) Explain properties of good Wood Preservatives and classify the various Wood Preservatives with the help of a flowchart. *12*

   (b) Describe the Boucherie process of Wood preservation with its advantages. *6*

   (c) Describe the mathematical expression for Biotic Potential and Environmental resistance. *6*

(d) Discuss "ecological amplitude" and the "law of tolerance" in the context in which they are generally used. *6*

(e) Describe the importance of pug marks and illustrate sex differentiation based on pug marks. How do these help in forest management system ? *10*

7. (a) Discuss the Phytosociological analysis describing formulae for calculation of

(i) Frequency and Relative frequency,

(ii) Density and Relative density,

(iii) Abundance,

(iv) Relative dominance, and

(v) Importance Value Index (IVI). *15*

(b) Describe the prevention and control of termite damages in timber. *5*

(c) Explain with the help of suitable examples the various kinds of Population Interactions during their growth period and give difference between Commensalism and Amensalism of plant relationship. *10*

(d) State what are the plant parasitic nematodes associated with nursery forest plant species. *5*

(e) Briefly explain the Monteith formula for biomass estimation of plants. *5*

8. (a) Bring out the background and need for Forest Policy of 1988 with its basic objectives. *15*

(b) Describe the altitudinal variations in flora of Eastern and Western Himalayas through a schematic diagram. *10*

(c) Explain dynamics of Forest Vegetation giving example of evolution of Sal Forest in Uttaranchal. *10*

(d) Briefly comment on the extent of wastages (in approximate percentage of total timber content) from harvesting to marketing stages and give the reasons for such wastages. *5*