

9. What are the organs of special sense, and what are the nerves which supply them? What are nerve-endings? Give examples. How do the nerves of special sense differ from the ordinary sensory nerves?

BOTANY.

[Alternative with Animal Physiology.]

1. By what characters are stems distinguished from roots?
2. What do you understand by the tissues of plants? Describe the chief forms of tissue, and show how they are related to one another. What are the chief systems of tissues?
3. Describe the minute structure of a leaf, and show how it is related to the functions of the leaves.
4. Explain fully how plants obtain their carbon. What are the necessary conditions for the process, and what parts of the plant are concerned in it? What are the first carbon-compounds which can be recognised in the plant? Describe the experimental evidence on which your answer is based.
5. What do you know of the uses of water to the plant?
6. What is a seed? Describe fully the structure and mode of germination of any seed.
7. Describe the structure of the flower and fruit in the pine or any other coniferous plant. In what respects do coniferous plants differ from angiosperms?
8. What is a carpel? Describe the formation of the fruit in any four of the following: Apple, potato, plum, buttercup, strawberry, rose.
9. Describe the flower of the lily (or any other member of the Liliaceæ), and compare with it flowers of plants belonging to any other order of the monocotyledons you may be acquainted with.

Shorthand.—Optional for Junior and Senior Civil Service. Time allowed: 2 hours.

INSTRUCTIONS TO SUPERVISORS.

1. Inform candidates before the time for taking up this subject that they may use pen or pencil as they please for taking notes, which should be written on ruled paper, but that they must transcribe those notes into longhand with pen and ink.
 2. Inform candidates that when once you have commenced to dictate you cannot stop until the passage is finished.
 3. Dictate the passages at the following rates of speed:—

Junior	{	(a.) 50 words per minute.	Senior	{	(a.) 80 words per minute.
	(b.)	80 " "		(b.)	120 " "
	(c.)	100 " "		(c.)	150 " "
- N.B.—It will be well to practise reading these aloud some time beforehand, looking at a watch or clock, so as to accustom yourself to reading in each minute the exact number of words indicated.
4. Candidates are at liberty to take down the three passages, if they choose. If they do so, all the passages are to be dictated to them before they commence transcribing. If a candidate takes only one or two of the passages he is to commence transcribing as soon as he has finished taking notes.
 5. Inform candidates that rapidity in transcribing notes into longhand is essential, and note carefully on the transcribed copy the exact time taken in transcription.
 6. Inform them also that the clearness and accuracy of the shorthand notes (which must in every case be sent in attached to the transcript) will be taken account of by the examiner.

PASSAGES FOR DICTATION.

Junior.

- (a.) At the rate of 50 words per minute. Takes 10 minutes. "Sir, I rise to a question . . . it would have." (*Hansard*, No. 11, 1890, pp. 153, 154.)
- (b.) At the rate of 80 words per minute. Takes 10 minutes. "It is surprising . . . a member of that profession." (*Hansard*, No. 11, 1890, pp. 129, 130.)
- (c.) At the rate of 100 words per minute. Takes 5 minutes. "That form was supplied . . . his duty, on the resolution." (*Hansard*, No. 11, 1890, p. 149.)

Senior.

- (a.) At the rate of 80 words per minute. Takes 10 minutes. "Appointments are to be made . . . in a short speech." (*Hansard*, No. 11, 1890, p. 192.)
- (b.) At the rate of 120 words per minute. Takes 10 minutes. "If we trace back . . . that they should act independently." (*Hansard*, No. 17, 1890, pp. 35, 36.)
- (c.) At the rate of 150 words per minute. Takes 5 minutes. "It is not likely . . . no other country in the world." (*Hansard*, No. 24, 1890, p. 586.)

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