

2. What are glands? Describe the chief types of structure found in glands. Enumerate the various kinds of glands found in the body, and give their function.
3. What is the source of the heat of the body? How is the body maintained at a constant temperature?
4. What are the functions of the spinal cord, and how can they be demonstrated?
5. What are the sources of loss and gain of material to the blood?
6. Give an account of the lymphatic system.
7. Explain how the erect position of the body is maintained.
8. Give an account of the process of digestion. What do you understand by digestive ferments? What is their chemical nature, and how could you show their properties experimentally?
9. Describe the organ of smell. Under what conditions may the senses of taste and smell be confused with one another?

[Botany.—Alternative with Zoology.]

1. Describe fully the minute structure of a leaf, and show how its characteristic features are related to the life of the plant.
2. Explain the various contrivances found in plants for enabling them to climb, and show how far these contrivances may be regarded as modifications of organs existing in all ordinary plants.
3. What do you understand by a fibro-vascular bundle? Describe the elements found in an ordinary open fibro-vascular bundle, and show how they are related to simple undifferentiated cells.
4. What is chlorophyll? In what parts of plants, and in what form, does it occur? Give all the evidence you know of which throws light upon its function, describing the experiments.
5. What do you understand by transpiration? Show its importance in the life of the plant. What tissues are concerned in transpiration? How can it be measured?
6. What do you understand by true and spurious fruits? Give examples of as many of the chief types of fruits as you can.
7. Describe the chief forms of inflorescences. Give examples, taking them, so far as you are able, from native plants.
8. Explain fully the differences which exist between Monocotyledons and Dicotyledons.
9. Write an account of the following orders of plants: Coniferæ, Rosaceæ, Gramineæ. Give examples of each order.

Shorthand.—Optional for Junior and Senior Civil Service. Time allowed: 3 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 the speed.
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.
"It affords me great pleasure . . . steadily advanced in England." (*Hansard*, No. 1, 1889, pp. 1, 2.)
- (b.) At the rate of 80 words per minute. Takes 10 minutes.
"In rising this evening . . . which they have effected." (*Hansard*, No. 1, 1889, p. 5.)
- (c.) At the rate of 100 words per minute. Takes 5 minutes.
"When they took up . . . it is proposed to have some reform." (*Hansard*, No. 1, 1889, pp. 5, 6.)

Senior.

- (a.) At the rate of 80 words per minute. Takes 10 minutes.
"I believe that our . . . and I trust we shall." (*Hansard*, No. 1, 1889, pp. 6, 7.)
- (b.) At the rate of 120 words per minute. Takes 10 minutes.
"We know that at the present . . . accuracy of facts." (*Hansard*, No. 4, 1889, pp. 219, 220.)
- (c.) At the rate of 150 words per minute. Takes 5 minutes.
"Such an objection . . . and the results." (*Hansard*, No. 6, 1889, pp. 340, 341.)

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