

[This question paper contains 02 printed pages]

Roll Number: \_\_\_\_\_

HPAS (Main) Examination-2018

Medical Science-I

Time: 3 Hours

Maximum Marks: 100

Note:

1. This question paper contains eight questions. Attempt total five questions including question No.1 which is compulsory.
2. Each question carries equal marks. Marks are divided and indicated against each part of the question.
3. Write legibly. Each part of the question must be answered in sequence in the same continuation. Answers should be brief and to the point.
4. If questions are attempted in excess of the prescribed number only questions attempted first up to the prescribed number shall be valued and the remaining answers will be ignored.

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1. (a) Write a note on Transplantation of Human Organs Act, 1994?  
What are the criteria's to diagnose brain stem death?

(b) Describe the blood supply and lymphatic drainage of the stomach. With the help of a diagram explain the posterior relations of the stomach.

10X2=20

2. (a) Explain the biochemical process of DNA replication in prokaryotes. Write a short note on Histones.

(b) What are the boundaries and contents of axilla? Explain the formation and division of the Brachial Plexus.

10X2=20

3. (a) What is an action potential? Explain the process of synaptic transmission.

- (b) Explain the oxygen dissociation curve. Enumerate the differences between hemoglobin and myoglobin.  
10X2=20
4. (a) Discuss the role of DNA analysis in various medico-legal cases. Describe various materials and techniques used for DNA analysis in medico-legal cases.
- (b) Explain the optic pathway with the help of a diagram. Explain the physiology of vision loss in pituitary adenoma.  
10X2=20
5. (a) What are the features of organophosphate poisoning? How will you manage a patient presenting with the same?
- (b) Write a short note on hemagglutinin and neuraminidase with respect to influenza virus. Write a short note on H1N1? What are the available vaccines?  
10X2=20
6. (a) Describe the genetic progression of colonic cancer. What is Knudson's two hit hypothesis?
- (b) Explain in detail the approach of a medical officer towards the rape victim.  
10X2=20
7. (a) Classify diuretics by mechanism of action. What are the side effects of loop diuretics?
- (b) What is the difference between necrosis and apoptosis? Describe the different types of necrosis.  
10X2=20
8. (a) Explain the different phases of clinical drug trials. Write a note on macrolide antibiotics?
- (b) Explain the mechanism of antibiotic resistance. Describe the different laboratory methods to assess the same.  
10X2=20