

2021

PHYSIOLOGY — HONOURS

Paper : SEC-B-1

**(Detection of Food Additives/Adulterants
and Xenobiotics)**

Full Marks : 80

The figures in the margin indicate full marks.

*Candidates are required to give their answers in their own words
as far as practicable.*

Group - A

1. Answer **any ten** questions :

2×10

- (a) Why is trivalent arsenic more toxic than pentavalent arsenic?
- (b) Name two persistent organic pollutants.
- (c) Is it safe to use aluminium foil for wrapping food? Justify your answer.
- (d) What is the purpose of glucuronidation in Xenobiotic metabolism?
- (e) Does margarine clog your arteries? Justify your answer.
- (f) What are the major sources of dioxin?
- (g) Name two endogenous xenobiotics.
- (h) Name two compounds that are conjugated with glycine for detoxification.
- (i) Mention one simple method of chicory differentiation from coffee powder.
- (j) What is bioactivation of xenobiotic compounds?
- (k) According to FSSAI guidelines, MSG is not permitted in which food stuffs?
- (l) Give examples of two flavouring food additives.
- (m) Mention two sources of Bisphenol A exposure in human body.
- (n) What is incidental adulteration?
- (o) State two uses of Rhodamine B.

Group - B

2. Write short notes on (**any four**) :

5×4

- (a) Mercury toxicity in human health.
- (b) Glucuronidation in xenobiotic metabolism.

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- (c) PFA.
- (d) Toxic effects of metanil yellow on human body.
- (e) Physiological effects of chicory in food.
- (f) Conjugation with glutathione in drug detoxification.

Group - C

Answer *any four* questions.

3. (a) What are xenobiotic compounds? Mention two characteristics.
(b) Where does phase I xenobiotic metabolism occur?
(c) Describe the role of monooxygenases in phase I reactions of xenobiotic metabolism. 4+1+5
4. (a) Briefly describe the neurotoxic and hepatotoxic effects of lead.
(b) Give an account of health effects of dioxins. 5+5
5. (a) Mention two sources of polychlorinated bisphenyls.
(b) What are the long term side-effects of polychlorinated bisphenyls on human health?
(c) State two pathophysiological effects of urea? 2+6+2
6. (a) Describe the oxidative stress of arsenic on humans.
(b) Arsenic is potentially harmful, then why it is used in medicines?
(c) State the harmful effects of consumption of MSG. 4+2+4
7. (a) How do you detect rhodamine B?
(b) Give an account of the acute health effects of rhodamine B.
(c) Is rhodamine B a xanthene dye? Explain your answer. 3+4+3
8. How can the presence of adulterants be detected in the following items?
(a) Ghee
(b) Milk
(c) Oil
(d) Honey
(e) Turmeric powder. 2+2+2+2+2
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