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Q48

With reference to monoclonal antibodies, often mentioned in news, consider the following statements: I. They are man-made proteins. II. They stimulate immunological function due to their ability to bind to specific antigens. III. They are used in treating viral infections like that of Nipah virus. Which of the statements given above are correct? (a) I and II only (b) II and III only (c) I and III only (d) I, II and III Official key: C.

UPSC Civil Services Prelims 2025 · General Studies · 2 marks · Current Affairs and GK

Current events, government schemes, miscellaneous GK - Prelims GS Paper I.

Explanation

(a)

I and II only. That drops the Nipah/viral-use line, which is keyed.

(b)

II and III only. That drops the man-made-protein line.

(c) Official key

I and III only. Monoclonal antibodies are laboratory proteins, and they are used against some viral infections (including Nipah protocols). II is not in the official pair.

(d)

I, II and III. II is the extra limb.

Summary

Official Set A key is (c) I and III only. Monoclonal antibodies are engineered proteins that bind a chosen antigen. They are used in several viral treatments and were discussed for Nipah. Statement II's wording - that they stimulate immunity because they bind antigen - is the distractor: many mAbs neutralise or flag a target; they are not a general immune stimulant. So I and III are scored; II is not.

Related possible facts

These can be asked in a future Prelims paper.

Monoclonal antibody (mAb)

Identical antibodies from one B-cell clone. Bind one epitope. Used in cancer, autoimmunity and some viral disease.

m102.4

A monoclonal tried in Nipah under compassionate use (including doses sourced via Australia). Not a routine licensed drug.

Polyclonal antibodies

A mix from many clones, many epitopes. The neighbour of monoclonal in immunology PYQs.

Hybridoma

Kohler and Milstein: fuse a B cell with a myeloma cell to manufacture one antibody at scale.

REGEN-COV / casirivimab-imdevimab

COVID-19 monoclonal cocktail. Shows the same idea: designed proteins against a viral antigen.

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