Question 16
Which one of the following best describes endocrinological changes demonstrated in the serum of patients with major depression?

<table>
<thead>
<tr>
<th></th>
<th>Cortisol</th>
<th>Corticotropin-releasing factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>A.</td>
<td>Suppressed</td>
<td>Suppressed</td>
</tr>
<tr>
<td>B.</td>
<td>Suppressed</td>
<td>Elevated</td>
</tr>
<tr>
<td>C.</td>
<td>Elevated</td>
<td>Suppressed</td>
</tr>
<tr>
<td>D. [Elevated]</td>
<td>[Elevated]</td>
<td>[Normal]</td>
</tr>
<tr>
<td>E.</td>
<td>Elevated</td>
<td>Normal</td>
</tr>
</tbody>
</table>

What you need to know

1. A basic understanding of the hypothalamic-pituitary-adrenal axis

And

1. Specific piece of knowledge of the findings in major depression

This is an extract from:

REVIEW: Glucocorticoid Receptors in Major Depression: Relevance to Pathophysiology and Treatment
Introduction
Hyperactivity of the hypothalamic–pituitary–adrenal (HPA) axis in patients with major depression is one of the most consistent findings in biological psychiatry. Specifically, patients with major depression have been shown to exhibit increased concentrations of cortisol in plasma, urine, and cerebrospinal fluid (CSF); an exaggerated cortisol response to adrenocorticotropic hormone (ACTH); and an enlargement of both the pituitary and the adrenal glands (Gold et al 1988; Holsboer and Barden 1996; Nemeroff 1996; Owens and Nemeroff 1993). These HPA axis alterations are believed to be secondary to hypersecretion of corticotropin-releasing hormone (CRH), which has behavioral effects in animals that are similar to those seen in depressed patients, including alterations in activity, appetite, and sleep (Owens and Nemeroff 1993). Moreover, depressed patients exhibit increased concentrations of CRH in the CSF, increased CRH messenger RNA (mRNA) and protein in the paraventricular nucleus (PVN) of the hypothalamus (postmortem samples), and a blunted ACTH response to a CRH challenge (likely reflecting downregulation of pituitary CRH receptors) (Gold et al 1988; Nemeroff 1996).

In summary CRH is increased in the presence of increased cortisol

And
2. Assumes some knowledge of the treatment of depression

So in the answer
B and C could be normal states
Major depression would be more likely to reflect a stress state so you would assume that cortisol levels are high even if you didn’t know the above fact so A is out
Which leaves D and E and knowing the fact above

So the answer is D

References:
Harrisons

Carmine M. Pariante and Andrew H. Miller REVIEW: Glucocorticoid Receptors in Major Depression: Relevance to Pathophysiology and Treatment
