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lect one: 20 5 400 40 ur answer is correct. e correct answer is: 20 tion 2 t	$E_0 \in \mathbb{R}^n$ RV. Then, $E\{U\}$ equals
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20	RV. Then, variance of U equals
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pproximated as	forem, the P_D for the energy detector can be

Select one:

 $Q\left(\frac{\frac{\gamma}{\sigma^2 + \sigma_S^2} - 2N}{\sqrt{N}}\right)$

$$Q\left(\frac{\frac{\gamma}{\sigma^2 + \sigma_s^2} - N}{\sqrt{2N}}\right) \quad \checkmark$$

$$Q\left(\frac{\frac{\tilde{\gamma}}{\sigma^2 + \sigma_s^2} - \sqrt{2N}}{N}\right)$$

$$Q\left(\frac{\frac{\tilde{\gamma}}{\sigma^2 + \sigma_S^2} - 2N}{\sqrt{2N}}\right)$$

Your answer is correct.

The correct answer is: $Q\left(\frac{\tilde{\gamma}}{\sigma^2 + \sigma_s^2} - N\right)$

Question **4**

Correct

Mark 1.00 out of 1.00

 $\ensuremath{\mathbb{V}}$ Flag question

The GLRT problem described in lectures is

Select one:

- $\bigcirc \quad \mathcal{H}_0 \colon \overline{\mathbf{y}} = \overline{\mathbf{v}}, \mathcal{H}_1 \colon \overline{\mathbf{y}} = A\overline{\mathbf{s}} + \overline{\mathbf{v}}, \text{ where } A, \overline{\mathbf{s}} \text{ are unknown}$
- $\bigcirc \quad \mathcal{H}_0 \colon \overline{\mathbf{y}} = \overline{\mathbf{v}}, \mathcal{H}_1 \colon \overline{\mathbf{y}} = A\overline{\mathbf{s}} + \overline{\mathbf{v}}, \text{ where } \overline{\mathbf{s}} \text{ is unknown and } A \text{ is unknown}$
- $\mathcal{H}_0: \bar{\mathbf{y}} = \bar{\mathbf{v}}, \mathcal{H}_1: \bar{\mathbf{y}} = A\bar{\mathbf{s}} + \bar{\mathbf{v}}, \text{ where } A, \bar{\mathbf{s}} \text{ are known}$

Your answer is correct.

The correct answer is: $\mathcal{H}_0: \bar{\mathbf{y}} = \bar{\mathbf{v}}, \mathcal{H}_1: \bar{\mathbf{y}} = A\bar{\mathbf{s}} + \bar{\mathbf{v}}$, where A is unknown and $\bar{\mathbf{s}}$ is known

Question **5**

Correct

Mark 1.00 out of 1.00

In the GLRT, the ML estimate of the parameter A is

Select one:

$$-\bar{\mathbf{s}}^T\bar{\mathbf{y}}$$

$$\frac{\bar{s}^T \bar{y}}{||\bar{s}||}$$

Your answer is correct.

The correct answer is: $\frac{\bar{s}^T \bar{y}}{\|\bar{s}\|^2}$

Question 6	
Correct	
Mark 1.00 out of 1.00	
The GLRT for the signal detection problem with unknown scaling parameter is given as	
The same of grant actions produced and action of the same of the s	
Select one:	
© Choose \mathcal{H}_0 if $ \bar{\mathbf{s}}^T\bar{\mathbf{y}} \leq \gamma$	
$\bigcirc \text{ Choose } \mathcal{H}_0 \text{ if } \mathbf{\bar{s}}^T \mathbf{\bar{y}} \geq \gamma$	
Choose \mathcal{H}_0 if $ \bar{\mathbf{s}}^T\bar{\mathbf{y}} \geq \gamma$	
Your answer is correct.	
The correct answer is: Choose \mathcal{H}_0 if $ \bar{\mathbf{s}}_{\underline{\mathbf{r}}}^T\bar{\mathbf{y}} \leq \gamma$	
Question 7	
Correct	
Mark 1.00 out of 1.00	
Flag question	
Consider $\gamma = 8$, $\sigma^2 = 8$, $\bar{s} = \begin{bmatrix} 1 & -1 & 1 & -1 \end{bmatrix}^T$. P_{FA} for the GLRT described in class is	
Select one:	
$\bigcirc 2Q\left(\frac{1}{\sqrt{2}}\right)$	
\bigcirc $2Q(\sqrt{2})$ \checkmark	
O 2Q(2)	
○ <i>Q</i> (2)	
Your answer is correct.	
The correct answer is: $2Q(\sqrt{2})$	
24(12)	
Question 8	
Question • Correct	
W. L. 4.00	

Mark 1.00 out of 1.00

 $\ensuremath{\mathbb{V}}$ Flag question

 P_D for the GLRT described in class is

Select one:

$$\bigcirc \quad Q\left(\frac{\gamma-A||\bar{s}||^2}{\sigma||\bar{s}||}\right)$$

$$\bigcirc \ \ Q(\gamma - A \|\bar{s}\|^2) + Q(\gamma + A \|\bar{s}\|^2)$$

$$\bigcirc \quad Q\left(\frac{\gamma-A||\bar{s}||^2}{||\bar{s}||^2}\right) + Q\left(\frac{\gamma+A||\bar{s}||^2}{||\bar{s}||^2}\right)$$

$$\bigcirc \quad Q\left(\frac{\gamma - A \|\bar{\mathbf{s}}\|^2}{\sigma \|\bar{\mathbf{s}}\|}\right) + Q\left(\frac{\gamma + A \|\bar{\mathbf{s}}\|^2}{\sigma \|\bar{\mathbf{s}}\|}\right) \checkmark$$

Your answer is correct.

The correct answer is: $Q\left(\frac{\gamma - A||\bar{s}||^2}{\sigma||\bar{s}||}\right) + Q\left(\frac{\gamma + A||\bar{s}||^2}{\sigma||\bar{s}||}\right)$

Question **9**

Correct

Mark 1.00 out of 1.00

 $\ensuremath{\mathbb{V}}$ Flag question

Cognitive Radio allows

Select one:

- Secondary users to always access licensed spectrum
- Secondary users to access licensed spectrum when there is a spectral hole
- Primary users to access spectrum only in limited slots
- Primary users to access spectrum only in limited slots

Your answer is correct.

The correct answer is: Secondary users to access licensed spectrum when there is a spectral hole

Question 10

Correct

Mark 1.00 out of 1.00

 $\ensuremath{\mathbb{V}}$ Flag question

The probability of detection for spectrum sensing is

Select one:

$$Q_{\chi^2_{2N}}\left(\frac{\gamma}{\sigma^2+\sigma_s^2}\right)$$

$$Q_{\chi_{2N}^2} \left(\frac{\gamma}{\sqrt{\frac{\sigma^2 + \sigma_s^2}{2}}} \right)$$

$$Q_{\chi^2_{2N}}\left(\frac{\gamma}{(\sigma^2+\sigma^2_s)/2}\right)$$

$$Q_{\chi_{2N}^2} \left(\frac{\gamma}{\sqrt{\sigma^2 + \sigma_c^2}} \right)$$

Your answer is correct.

The correct answer is: $Q_{\chi^2_{2N}}\left(\frac{\gamma}{(\sigma^2+\sigma^2_s)/2}\right)$

Finish review