# BIT Quiz 4

姓名： [填空题]
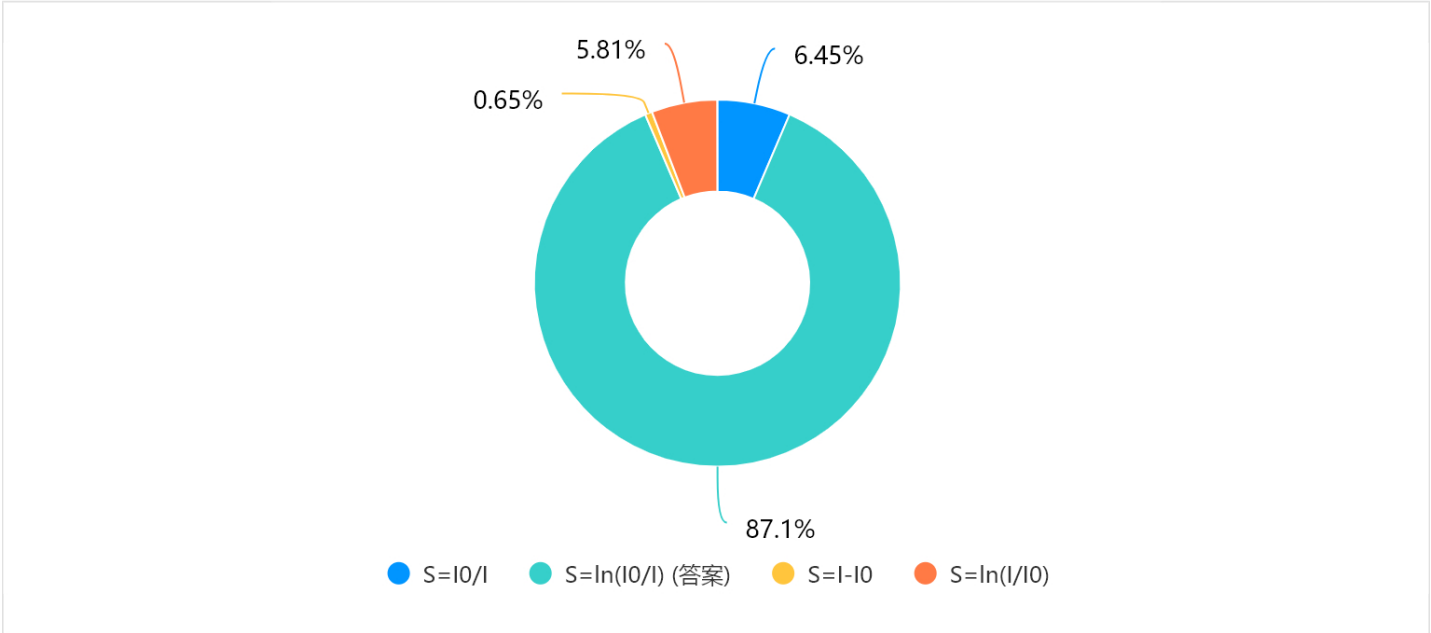
学号： [填空题]

第1题： S is total x-ray attenuation along the beam path.Which of the following formulas is correct for calculating S?

[单选题]

**正确率：** 87.1%

| 选项 | 小计 | 比例 |
|---|---|---|
| S=I0/I | 10 | 6.45% |
| S=ln(I0/I) (答案) | 135 | 87.1% |
| S=I-I0 | 1 | 0.65% |
| S=ln(I/I0) | 9 | 5.81% |



第2题： This image is after pre-processing



[单选题]

| 选项 | 小计 | 比例 |
|---|---|---|
| 对 (答案) | 140 | 90.32% |
| 错 | 15 | 9.68% |

错: 9.68%
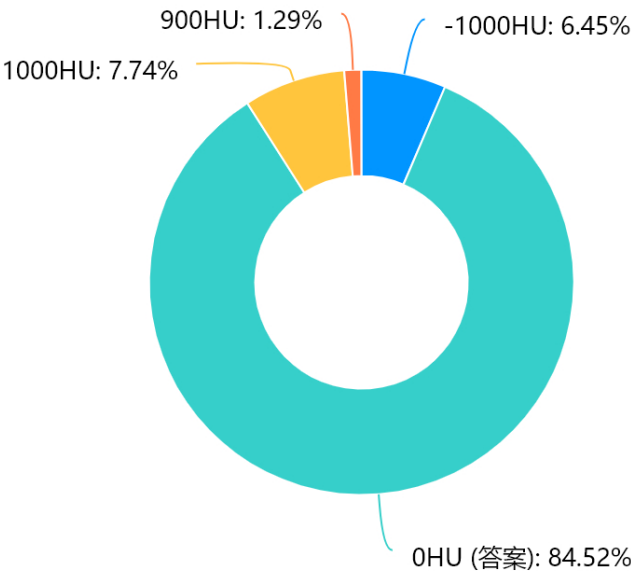
对 (答案): 90.32%
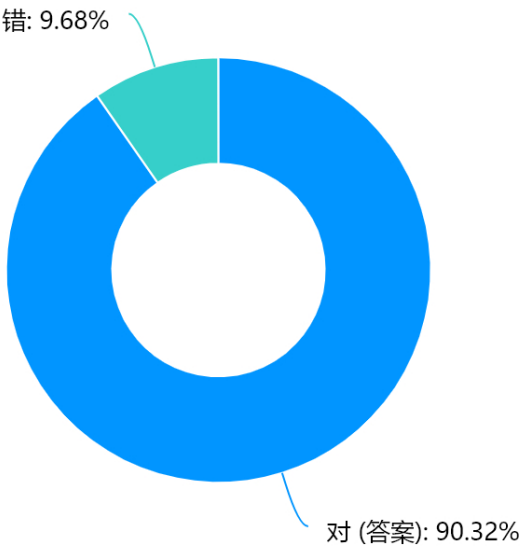
第3题： The attenuation coefficient of each voxel in CT images, when measured in a specific unit known as the Hounsfield unit, is referred to as the CT number. Therefore, what is the CT number for a water voxel? [单选题]

正确率： 84.52%

| 选项 | 小计 | 比例 |
|---|---|---|
| -1000HU | 10 | 6.45% |
| 0HU (答案) | 131 | 84.52% |
| 1000HU | 12 | 7.74% |
| 900HU | 2 | 1.29% |

900HU: 1.29%

-1000HU: 6.45%

1000HU: 7.74%

0HU (答案): 84.52%

第4题：Which steps are included in FBP (Filtered Back Projection)？ [多选题]

| 选项 | 小计 | 比例 |
|---|---|---|
| Collect one projection (答案) | 132 | 0% |
| Take its 1D Fourier transform (答案) | 125 | 0% |
| Apply ramp filter (答案) | 131 | 0% |
| Take inverse 1D Fourier transform (答案) | 137 | 0% |
| Back project the data across image space (答案) | 132 | 0% |
| Repeat for all projections (答案) | 123 | 0% |



- Collect one projection (答案)
- Apply ramp filter (答案)
- Back project the data across image space (答案)
- Take its 1D Fourier transform (答案)
- Take inverse 1D Fourier transform (答案)
- Repeat for all projections (答案)
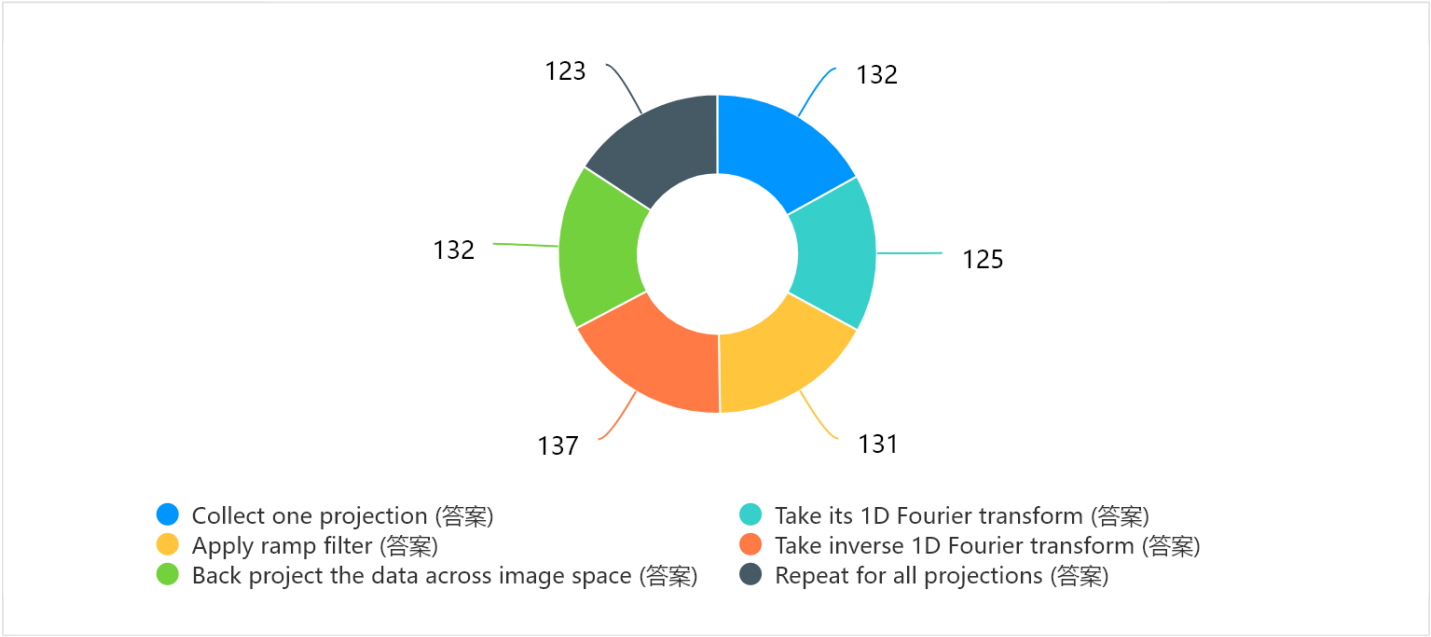
第5题：Scan Angle is the coverage angle of the source orbit during scanning. Which of the following options corresponds to the short scan mode? [单选题]

正确率：83.23%

| 选项 | 小计 | 比例 |
|---|---|---|
| 180 degree | 11 | 7.1% |
| 60 degree + fan angle | 14 | 9.03% |
| 360 degree | 1 | 0.65% |
| 180 degree + fan angle (答案) | 129 | 83.23% |

7.1%

9.03%

0.65%

83.23%
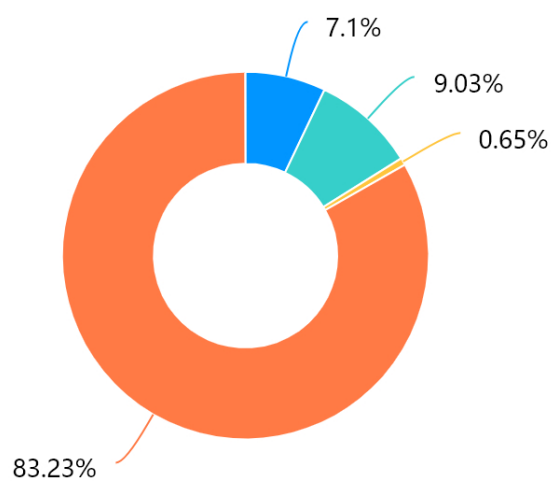
● 180 degree  ● 60 degree + fan angle  ● 360 degree  ● 180 degree + fan angle (答案)