# COMP9319 Exercises

**Solution :** Please see us at the consultations if there are any questions.

## A Sample XML document

```
<r>
 <a>
  <b>
   <c>
    <d>Text1</d>
   </c>
  </b>
  <b>
   <d>Text2</d>
 </b>
 </a>
 <a>
  <b>
   <c @b="1">
    <d>Text3</d>
   </c>
  </b>
  <b>
   <c>Text4</c>
  </b>
 </a>
 <a>
  <c>
   <d>Text5</d>
  </c>
 </a>
</r>
```

## Question 1

What is the result when the XPath /r/a/b/c[@b] is evaluated on the XML document above?

Ans:

```
<c @b="1">
 <d>Text3</d>
</c>
```

## Question 2

What is the result when the XPath //c[d] is evaluated on the XML document above?

Ans:

```
<c>
 <d>Text1</d>
</c>
<c @b="1">
 <d>Text3</d>
</c>
<c>
 <d>Text5</d>
</c>
```

# Question 3

What is the result when the XPath //a[b]//c[d] is evaluated on the XML document above?

Ans:

```
<c>
 <d>Text1</d>
</c>
<c @b="1">
 <d>Text3</d>
</c>
```

# Question 4

What is the result when the XPath //a/*/c[d] is evaluated on the XML document above?

Ans:

```
<c>
 <d>Text1</d>
</c>
<c @b="1">
 <d>Text3</d>
</c>
```

# Question 5

What is the result when the XPath //a[*]/c[d] is evaluated on the XML document above?

Ans:

```
<c>
 <d>Text5</d>
</c>
```

# Question 6

How does XGRIND achieve data compression and yet support queries on the compressed data ?

Ans:

Compression via: mapping tags to shorter labels; compress text data via static huffman.

Queryable: content and structures are preserved.

# Question 7

Calculate the min and max of the forward excess of the following tier-0 block in ISX:

```
(((()(())
```

## Ans:

```
min forward excess: 0
max forward excess: 5
```