***Advanced System on Chip Course***

**QUIZ 9**

**Issue 1.0**

# MODULE 9: HDMI Overview

**Question 1:**

HDMI (v2.0) improves achievable maximum video resolution of the VGA since:

1. the former can achieve 2560x1200 while the later can only achieve 800x600.
2. the former can achieve 1920x1200 while the later can only achieve 800x600.
3. the former can achieve 4096x2160 while the later can only achieve 1200x760.
4. the former can achieve 4096x2160 while the later can only achieve 2048x1536.

**Question 2:**

The HDMI interface has:

1. three physically separate communication channels, which are the DDC, the TMDS and the optional CEC.
2. three physically separate communication channels, which are the E-EDID, the TMDS, and the optional CEC.
3. three physically separate communication channels, which are the DDC, the TMDS, and the optional E-EDID.
4. four physically separate communication channels, which are the E-EDID, the DDC, the TMDS, and the optional CEC.

**Question 3:**

Regarding TMDS channels:

1. There are four pairs for parallel data communication.
2. There are four pairs for serial data communication and a clock wire.
3. There are three pairs for parallel data communication and a clock wire.
4. There are three pairs for serial data communication and a clock wire.

**Question 4:**

TMDS data channels:

1. are physically parallel pairs that transmit data in 3.3V voltage logic for noise reduction.
2. are physically twisted pairs that transmit data in 3.3V voltage logic for noise reduction.
3. are physically twisted pairs that transmit data in current logic terminated to 3.3V for noise reduction.
4. are physically twisted pairs that transmit data in current logic terminated to 5V for noise reduction.

**Question 5:**

TMDS channels use:

1. 5b/6b encoding, used to compress the information.
2. 8b/10b encoding, used to compress the information.
3. 8b/10b encoding, used to achieve DC balance and bounded disparity to limit EMC issues.
4. None of the above.

**Question 6:**

TMDS channels transmit:

1. Video data only.
2. Video data and audio data.
3. Video data and auxiliary data, which is often used to transmit audio data.
4. Video data, control data, and auxiliary data, which is often used to transmit audio data.

**Question 7:**

After clock and data recovery by the Sink, produced video data words are:

1. 4 bit wide.
2. 8 bit wide.
3. 12 bit wide.
4. 24 bit wide.

**Question 8:**

TMDS timing produces active video regions and blanking regions, which are used for:

1. Just adjusting the produced image to the screen dimensions.
2. Transmitting audio and auxiliary data.
3. Transmitting audio and auxiliary data, and control data.
4. Blanking regions are the product of synchronizing frequencies, but are otherwise useless.

**Question 9:**

The Preamble is:

1. contained in the Video Data Periods and is used as a video leading guard band.
2. contained in the Control Periods, preceding any Video and Data Island Periods, and is used to indicate the type of the upcoming data period.
3. contained in the Data Island Periods and is used to indicate whether contained auxiliary information is audio data or not.
4. the name used in the HDMI protocol to refer to the blank porches.

**Answers**

Q1) 4

Q2) 1

Q3) 4

Q4) 3

Q5) 3

Q6) 4

Q7) 2

Q8) 3

Q9) 2