Portfolio Evidence – The Good the Bad and the Ugly!

What counts as Evidence?

- Consider
  - Is it appropriate to the standard?
  - Is it at the right level? (registration vs specialist)
- Examples of types
  - In house assessments
  - Annotated results
  - Case studies
  - Reflective logs

Witness Statements

- Objective observations
- relating to a specific task or action
- independently written
- verified by the trainer

OR

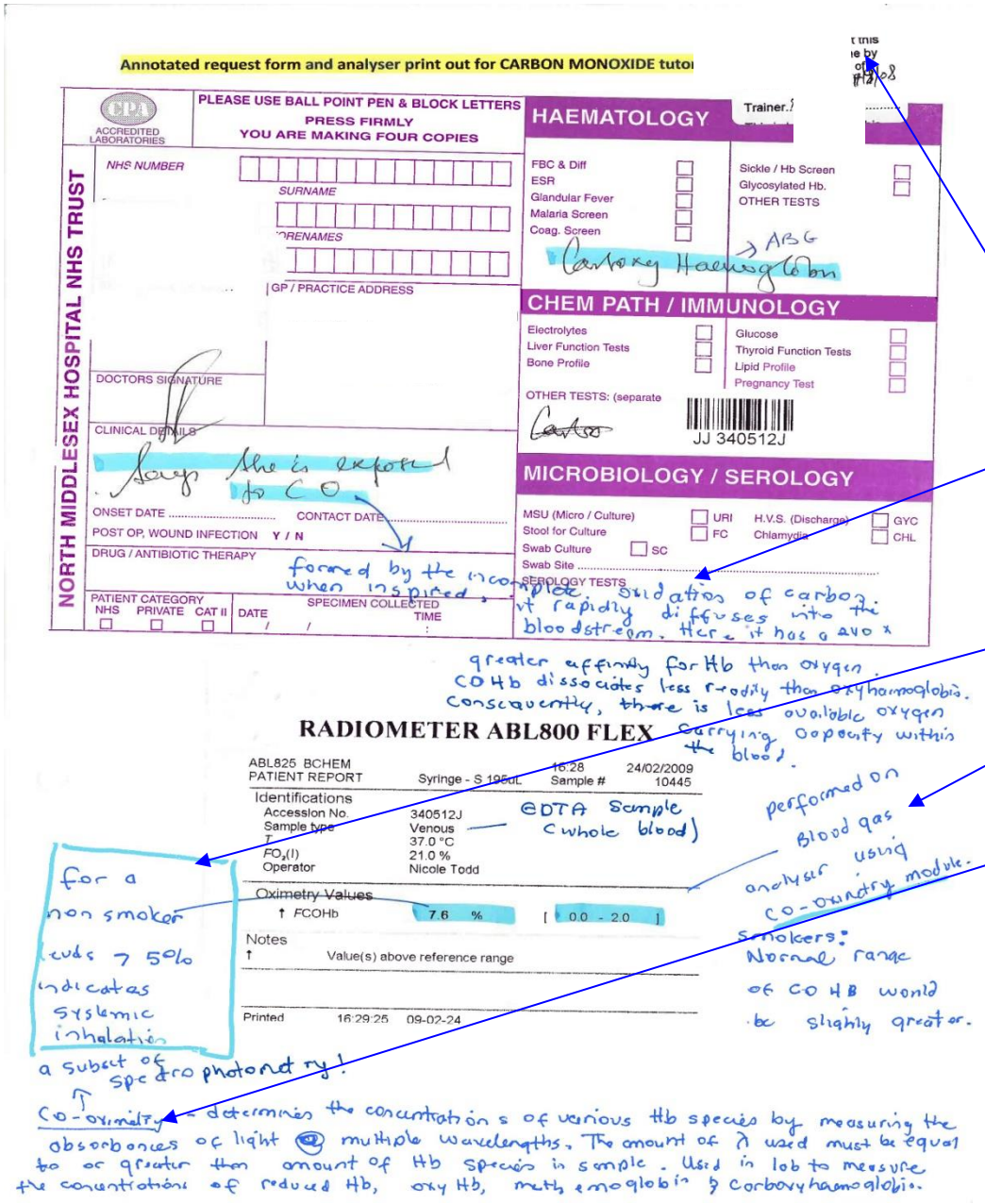
- Self witness statement written by trainee
- signed and authorised by the trainer

Reflective Logs

- A brief description of a process, incident or event undertaken by or involving the trainee that related to the standard.
- Should be accompanied by the personal thoughts of what has been learned (not the actual subject but what the trainee has taken from the experience) and how this might be applied in the future to their benefit and that of their service users.
- It is taking a holistic approach to the training experience.

Examples of Evidence

- All of the evidence on the following slides has been anonymised - all evidence that you assess should be **signed** and **dated**.

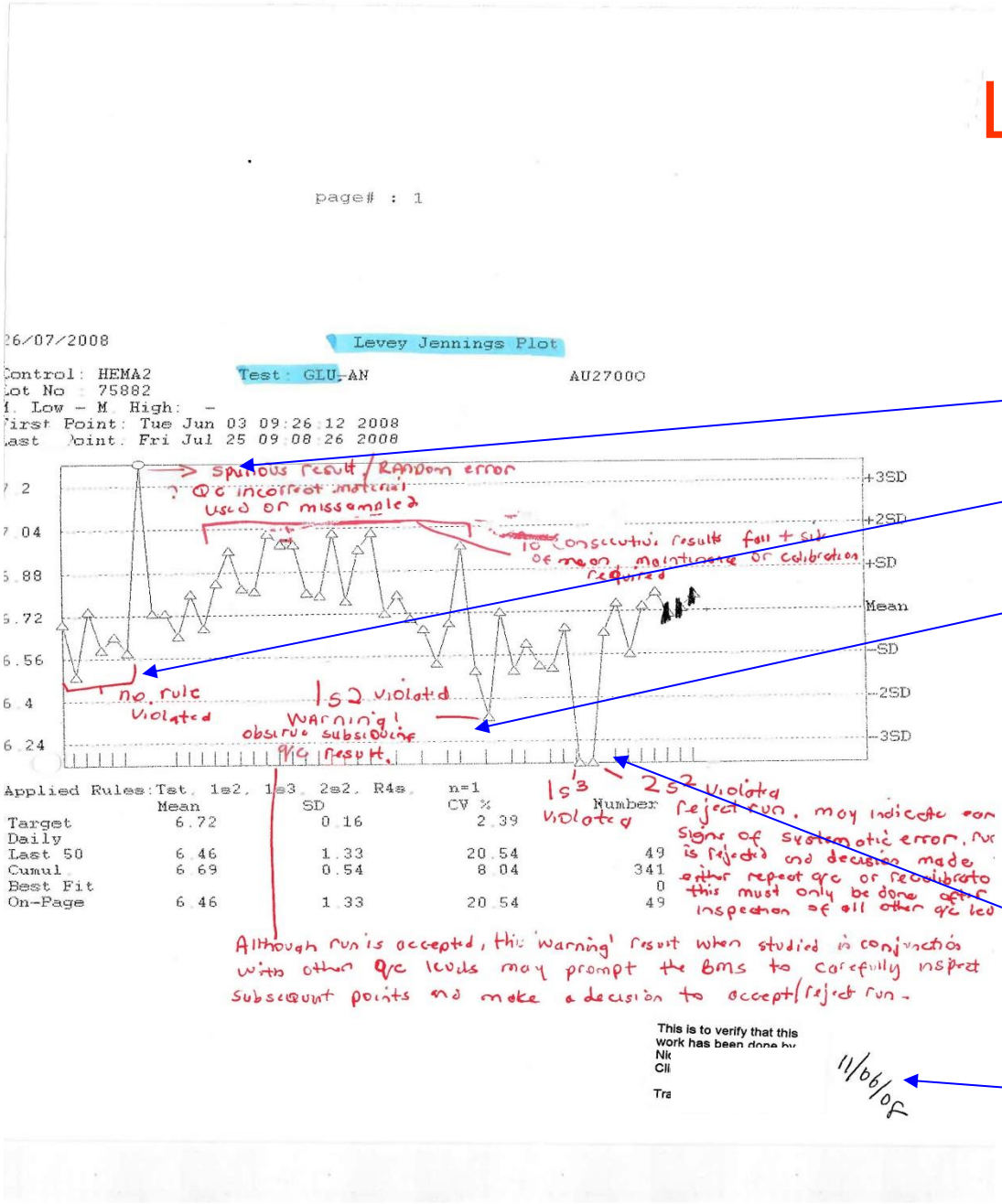


Carbon Monoxide Tutorial

- Assessed and dated
- Explanation of CO formation
- Comment on result
- Analyser
- Explanation

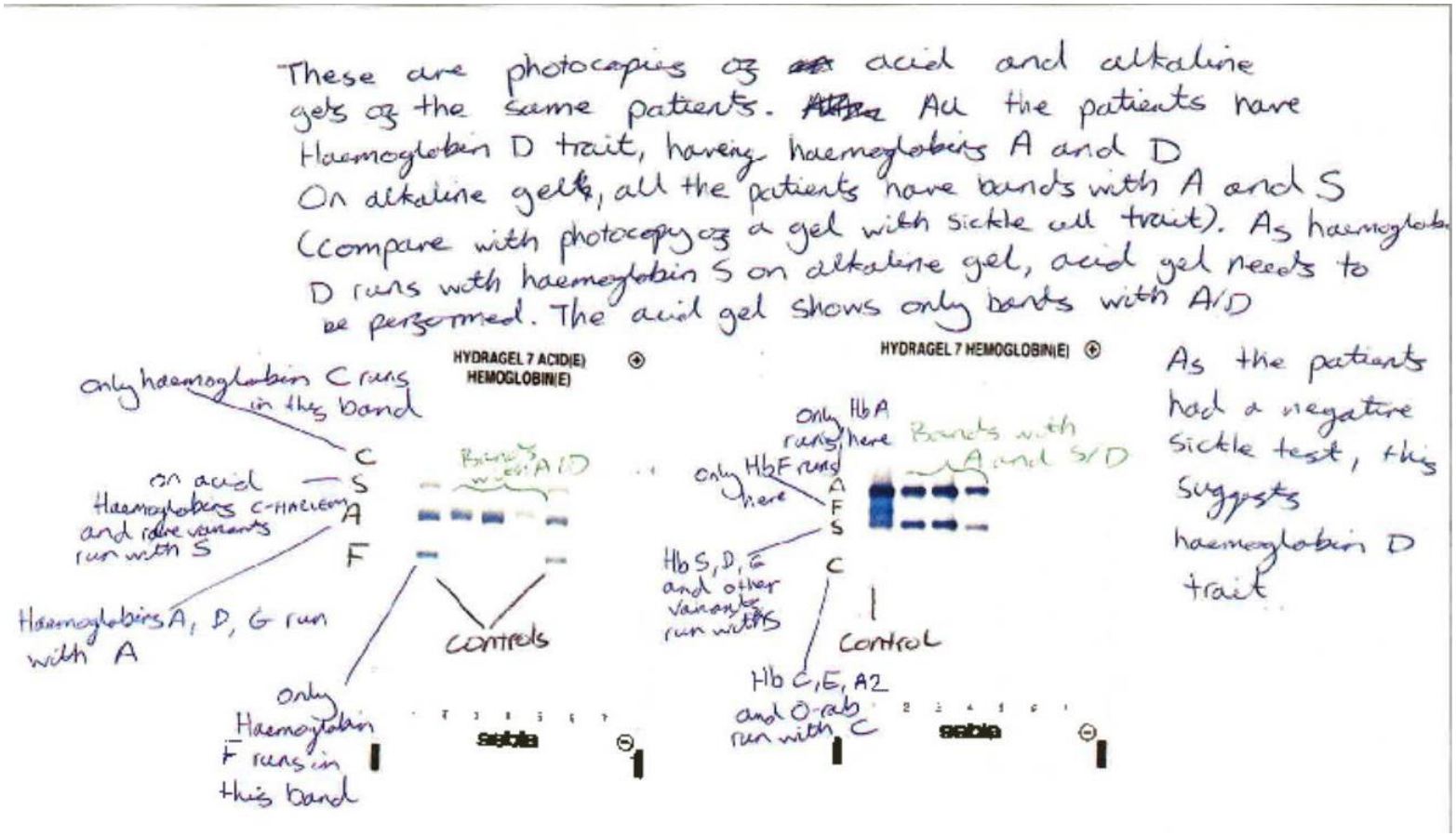
(Some feedback to the trainee might be that the annotation is tidier in future and moved away from the busier areas of the form)

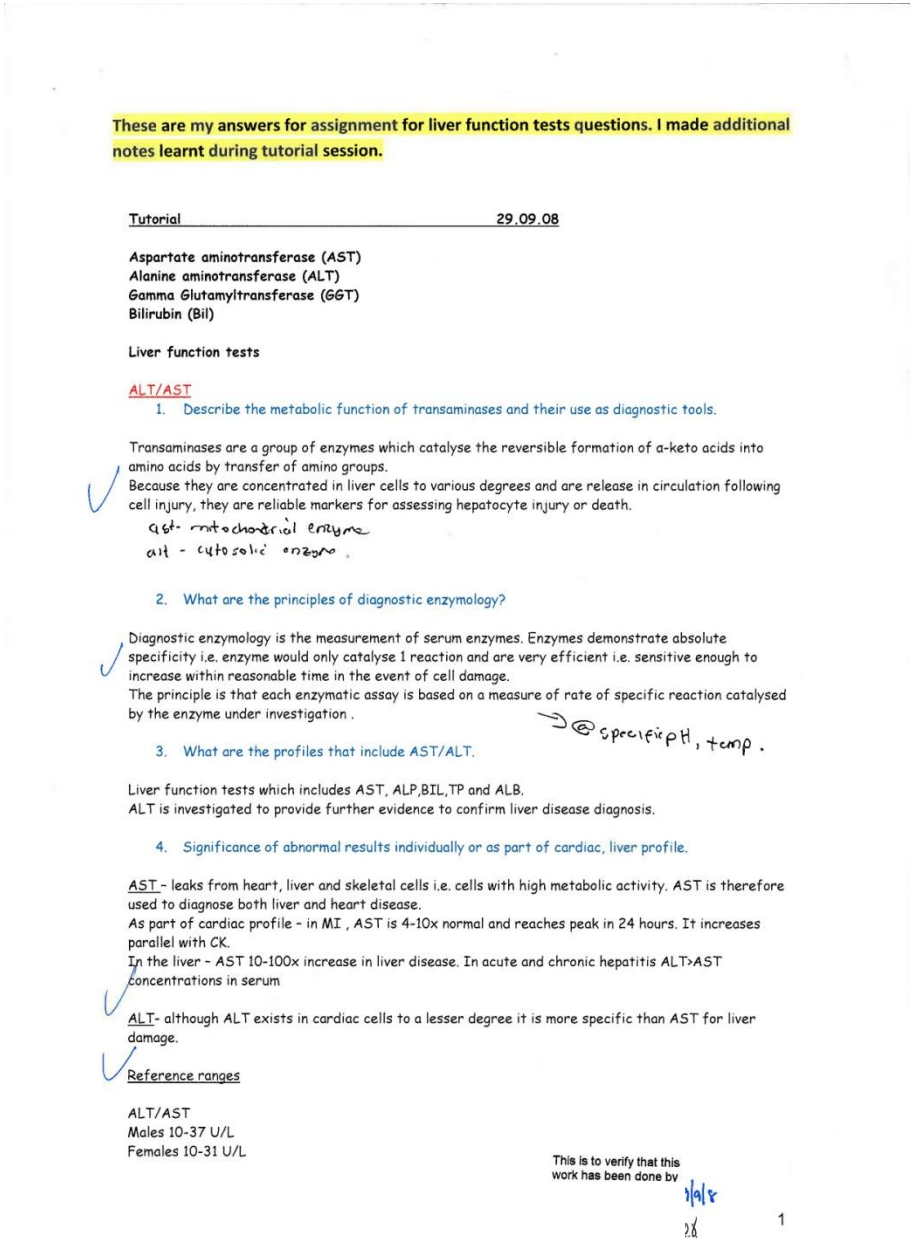
Levey Jennings Tutorial



- spurious result
- no rule violated
- warning to observe subsequent results
- violation – reject run
- assessed and dated

Good annotations. Candidate has used arrows to mark up and demonstrate their understanding of each part of the image. Clearly demonstrates ability to interpret results. Some feedback might be that the annotation is placed peripheral to the results for clarity of interpretation.





These are my answers for assignment for liver function tests questions. I made additional notes learnt during tutorial session.

Tutorial 29.09.08

Aspartate aminotransferase (AST)
Alanine aminotransferase (ALT)
Gamma Glutamyltransferase (GGT)
Bilirubin (Bil)

Liver function tests

ALT/AST

1. Describe the metabolic function of transaminases and their use as diagnostic tools.

Transaminases are a group of enzymes which catalyse the reversible formation of a-keto acids into amino acids by transfer of amino groups.
Because they are concentrated in liver cells to various degrees and are release in circulation following cell injury, they are reliable markers for assessing hepatocyte injury or death.

ast- mitochondrial enzyme
alt - cytosolic enzyme

2. What are the principles of diagnostic enzymology?

Diagnostic enzymology is the measurement of serum enzymes. Enzymes demonstrate absolute specificity i.e. enzyme would only catalyse 1 reaction and are very efficient i.e. sensitive enough to increase within reasonable time in the event of cell damage.
The principle is that each enzymatic assay is based on a measure of rate of specific reaction catalysed by the enzyme under investigation .

→ @ specific pH, temp.

3. What are the profiles that include AST/ALT.

Liver function tests which includes AST, ALP,BIL,TP and ALB.
ALT is investigated to provide further evidence to confirm liver disease diagnosis.

4. Significance of abnormal results individually or as part of cardiac, liver profile.

AST – leaks from heart, liver and skeletal cells i.e. cells with high metabolic activity. AST is therefore used to diagnose both liver and heart disease.
As part of cardiac profile – in MI , AST is 4-10x normal and reaches peak in 24 hours. It increases parallel with CK.
In the liver – AST 10-100x increase in liver disease. In acute and chronic hepatitis ALT>AST concentrations in serum

ALT- although ALT exists in cardiac cells to a lesser degree it is more specific than AST for liver damage.

Reference ranges

ALT/AST
Males 10-37 U/L
Females 10-31 U/L

This is to verify that this work has been done by

1/9/8

28

1

Liver Function Tutorial

- Function of metabolites
- Principles of technique
- Liver profiles
- Significance of results
- Assessed and dated

IBMS

Excellent way of evidencing an oral tutorial / Q&A session

Oral Assessment on Transfusion Knowledge

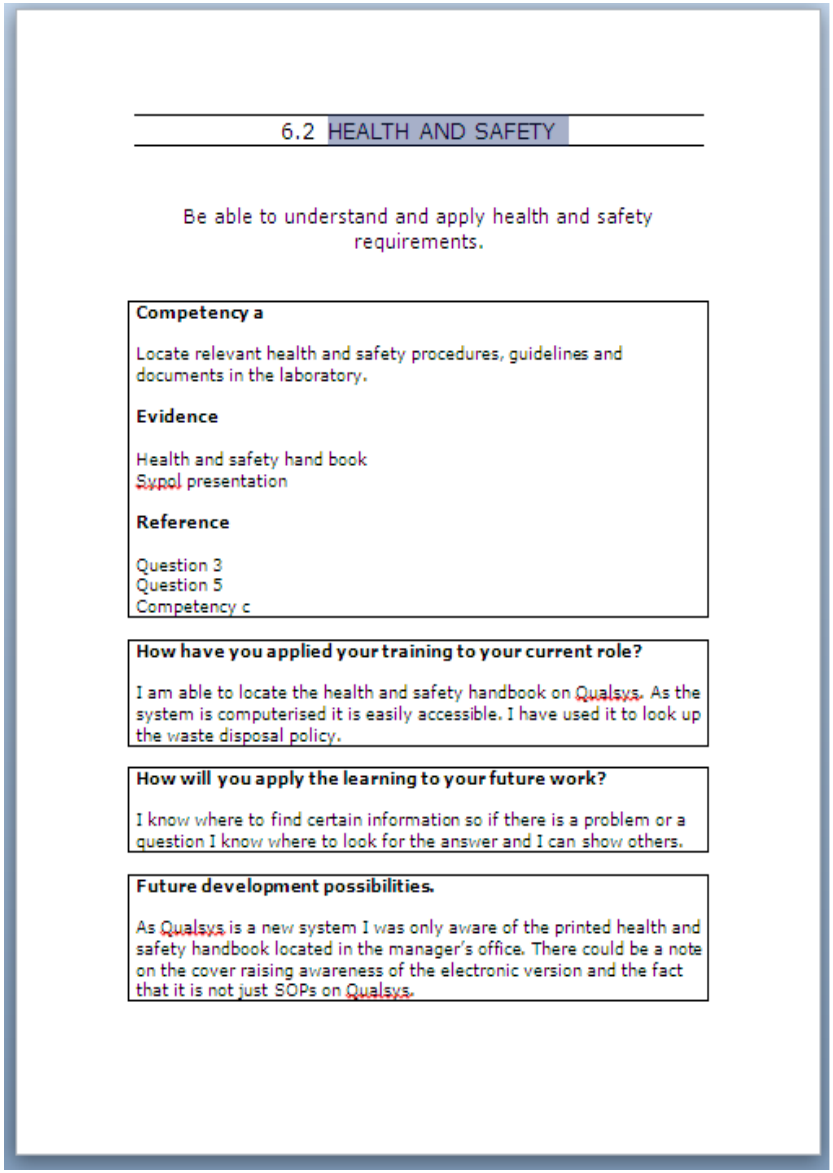
- Questions with expected answers
- Answers ticked off- some feedback could be added to affirm that trainee has a good understanding

This is the oral examination I sat with the transfusion specialist practitioner to prove my knowledge in this area. This enabled my competencies to be signed off and is good evidence for my portfolio

Transfusion Oral Assessment 06 Jan 2009

1. What are the two major Blood Group Systems?
   ABO and Rh
2. Up to how many days can a sample be tested for a Blood Group and Antibody Screen?
   7 days
3. What is the optimum temperature for ABO antibodies?
   Room Temperature 18 degC
4. What structure are ABO antibodies?
   IgM
5. What is the optimum temperature for Rh antibodies?
   37 degC
6. What structure are Rh antibodies?
   IgG
7. How can you demonstrate IgG antibodies?
   Using the ICT technique. Adding albumin / macromolecular to Rh antibody relations.
8. What test would you do to test for Haemolytic disease of the Newborn?
   DCT
9. If the baby had a Positive DCT but the mother had a Negative Antibody Screen, what would that suggest?
   ABO Incompatibility
10. How would you test for ABO incompatibility?
    Haemolysins
11. What is a feature in the Blood film of babies with ABO incompatibility?
    Spherocytes
12. What temperature is blood stored at?
    4 degC +/- 2 degrees
13. What temperature are platelets stored at?
    22 degC +/- 2 degrees
14. When FFP is thawed, what is the expiry time if it is stored in the Blood Bank – or at room temperature?
    24 hrs in the Blood Bank 4 hours at room temperature
15. What is the expiry time of Cryo Precipitate when thawed?
    4 hours

INSUFFICIENT EVIDENCE



6.2 HEALTH AND SAFETY

Be able to understand and apply health and safety requirements.

Competency a

Locate relevant health and safety procedures, guidelines and documents in the laboratory.

Evidence

Health and safety hand book
Sypol presentation

Reference

Question 3
Question 5
Competency c

How have you applied your training to your current role?

I am able to locate the health and safety handbook on Qualsys. As the system is computerised it is easily accessible. I have used it to look up the waste disposal policy.

How will you apply the learning to your future work?

I know where to find certain information so if there is a problem or a question I know where to look for the answer and I can show others.

Future development possibilities.

As Qualsys is a new system I was only aware of the printed health and safety handbook located in the manager's office. There could be a note on the cover raising awareness of the electronic version and the fact that it is not just SOPs on Qualsys.

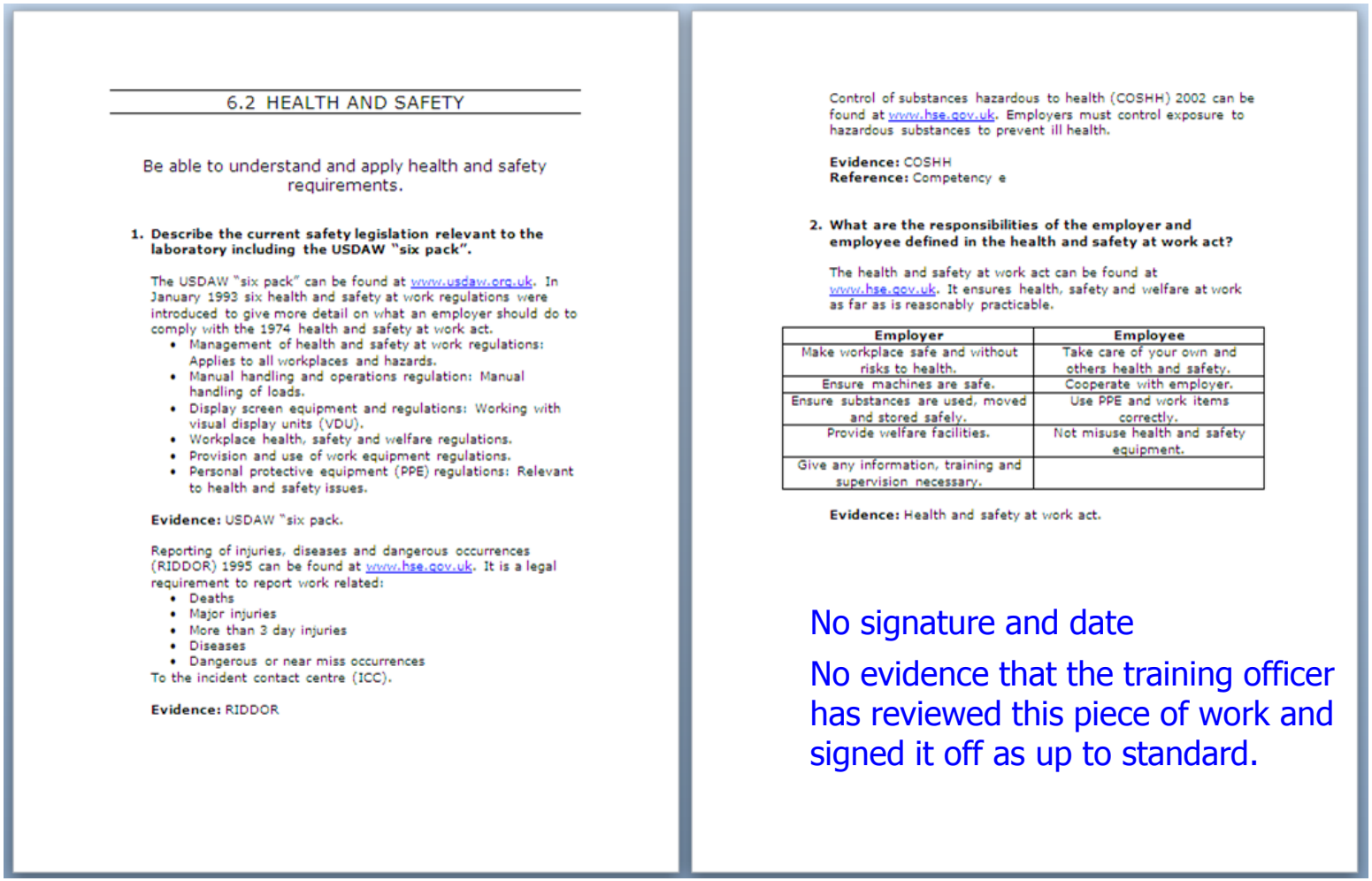
Not enough detail for it to be used as evidence at either registration or specialist level

H&S is a large subject area and this is not reflected in this piece of work.

Some feedback would be to direct the trainee to further information or by asking some questions associated with the activity.

For example, feedback could ask for specific answers or further descriptions of a scenario where this new knowledge would be applied.

Reads like it has been taken from the web or a textbook rather than candidate's own words. Not applied to the context of the lab.



6.2 HEALTH AND SAFETY

Be able to understand and apply health and safety requirements.

1. Describe the current safety legislation relevant to the laboratory including the USDAW "six pack".

The USDAW "six pack" can be found at www.usdaw.org.uk. In January 1993 six health and safety at work regulations were introduced to give more detail on what an employer should do to comply with the 1974 health and safety at work act.

- Management of health and safety at work regulations: Applies to all workplaces and hazards.
- Manual handling and operations regulation: Manual handling of loads.
- Display screen equipment and regulations: Working with visual display units (VDU).
- Workplace health, safety and welfare regulations.
- Provision and use of work equipment regulations.
- Personal protective equipment (PPE) regulations: Relevant to health and safety issues.

Evidence: USDAW "six pack.

Reporting of injuries, diseases and dangerous occurrences (RIDDOR) 1995 can be found at www.hse.gov.uk. It is a legal requirement to report work related:

- Deaths
- Major injuries
- More than 3 day injuries
- Diseases
- Dangerous or near miss occurrences

To the incident contact centre (ICC).

Evidence: RIDDOR

Control of substances hazardous to health (COSHH) 2002 can be found at www.hse.gov.uk. Employers must control exposure to hazardous substances to prevent ill health.

Evidence: COSHH
Reference: Competency e

2. What are the responsibilities of the employer and employee defined in the health and safety at work act?

The health and safety at work act can be found at www.hse.gov.uk. It ensures health, safety and welfare at work as far as is reasonably practicable.

Employer	Employee
Make workplace safe and without risks to health.	Take care of your own and others health and safety.
Ensure machines are safe.	Cooperate with employer.
Ensure substances are used, moved and stored safely.	Use PPE and work items correctly.
Provide welfare facilities.	Not misuse health and safety equipment.
Give any information, training and supervision necessary.	

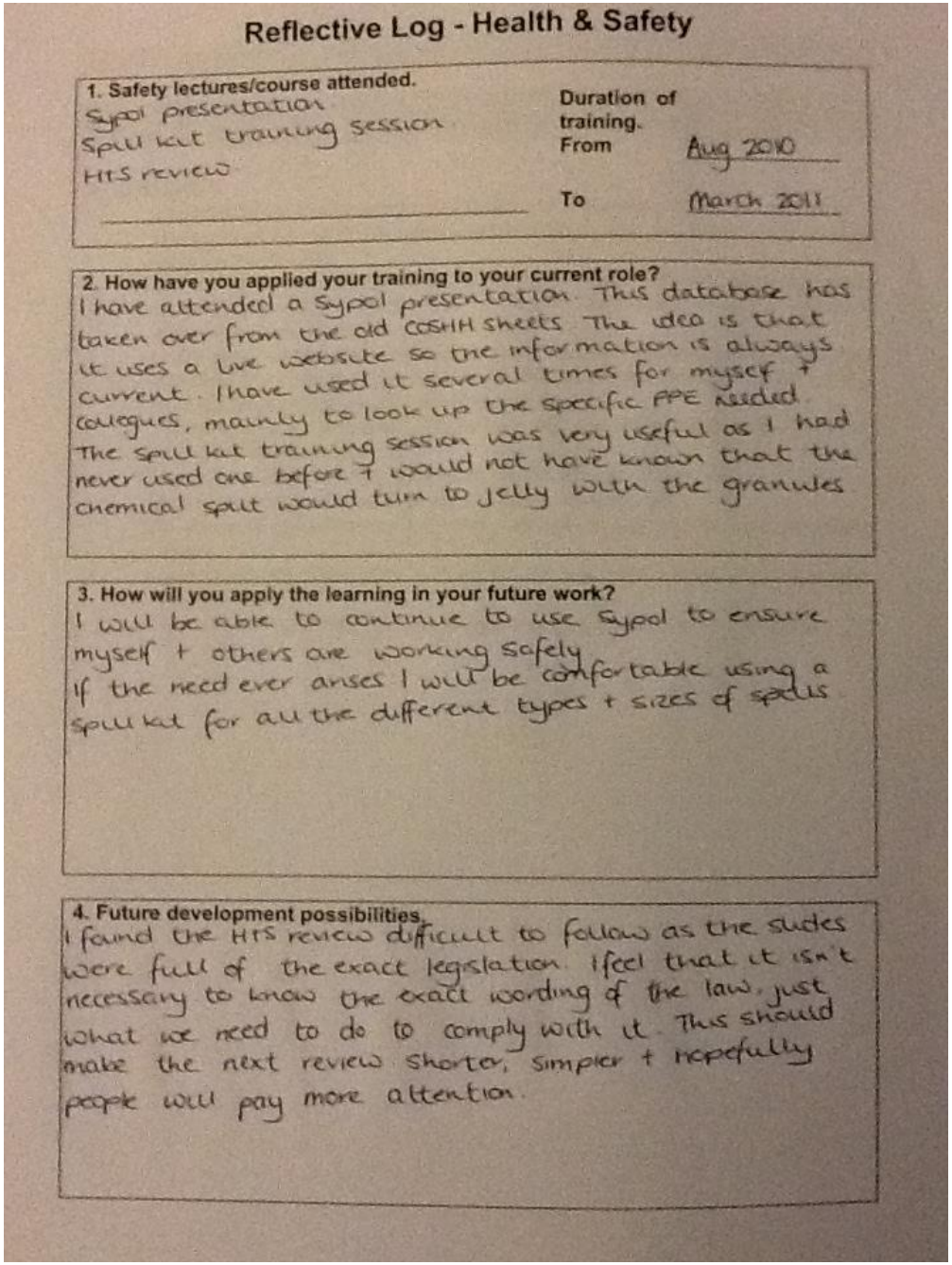
Evidence: Health and safety at work act.

No signature and date

No evidence that the training officer has reviewed this piece of work and signed it off as up to standard.

SATISFACTORY EVIDENCE

Suitable for Registration Portfolio due to the level of subject matter



Reflective Log - Health & Safety

1. Safety lectures/course attended.

Sypol presentation
Spill kit training session
HTS review

Duration of training.
From Aug 2010
To March 2011

2. How have you applied your training to your current role?

I have attended a Sypol presentation. This database has taken over from the old COSHH sheets. The idea is that it uses a live website so the information is always current. I have used it several times for myself + colleagues, mainly to look up the specific PPE needed. The spill kit training session was very useful as I had never used one before + would not have known that the chemical spill would turn to jelly with the granules

3. How will you apply the learning in your future work?

I will be able to continue to use Sypol to ensure myself + others are working safely
If the need ever arises I will be comfortable using a spill kit for all the different types + sizes of spills

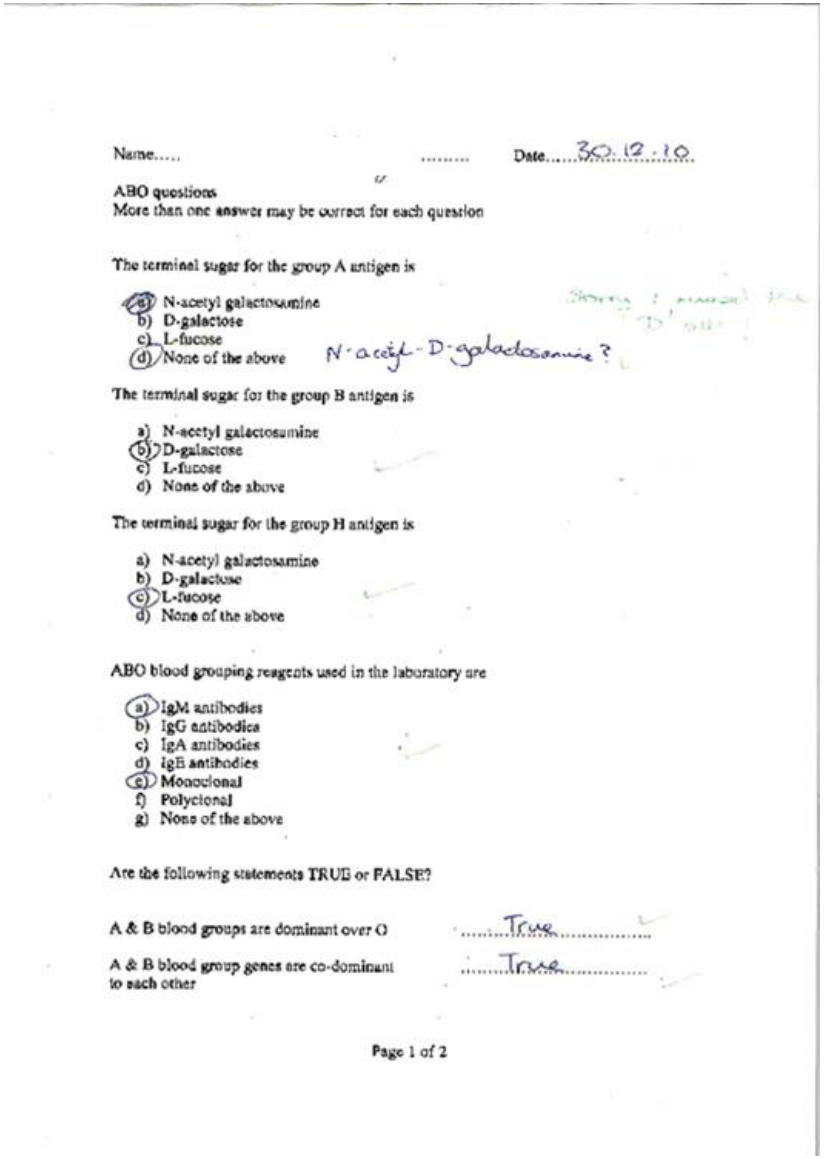
4. Future development possibilities.

I found the HTS review difficult to follow as the slides were full of the exact legislation. I feel that it isn't necessary to know the exact wording of the law, just what we need to do to comply with it. This should make the next review shorter, simpler + hopefully people will pay more attention.

Evidence of marking and feedback from Trainer

The candidate has highlighted an error in quiz!

Multiple choice questions



Name..... ..... Date..... 30.12.10

ABO questions
More than one answer may be correct for each question

The terminal sugar for the group A antigen is

a) N-acetyl galactosamine
b) D-galactose
c) L-fucose
d) None of the above

N-acetyl-D-galactosamine?

The terminal sugar for the group B antigen is

a) N-acetyl galactosamine
b) D-galactose
c) L-fucose
d) None of the above

The terminal sugar for the group H antigen is

a) N-acetyl galactosamine
b) D-galactose
c) L-fucose
d) None of the above

ABO blood grouping reagents used in the laboratory are

a) IgM antibodies
b) IgG antibodies
c) IgA antibodies
d) IgE antibodies
e) Monoclonal
f) Polyclonal
g) None of the above

Are the following statements TRUE or FALSE?

A & B blood groups are dominant over O ..... True .....

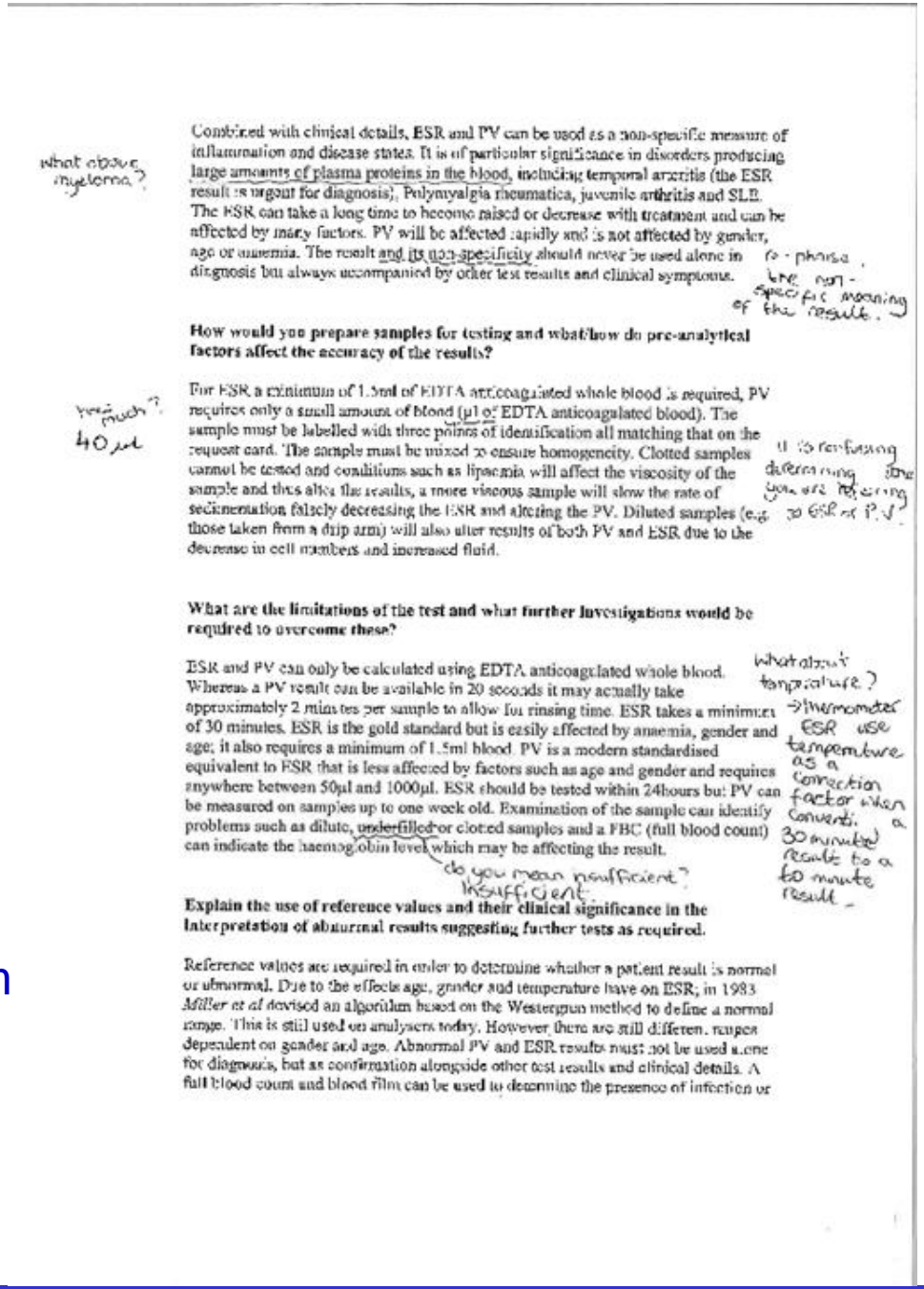
A & B blood group genes are co-dominant to each other ..... True .....

Page 1 of 2

Evidence of marking and feedback

Written Questions and Answers

- Comments from training officers
- Responses from candidate
- Shows learning progression



what about myeloma?

Combined with clinical details, ESR and PV can be used as a non-specific measure of inflammation and disease states. It is of particular significance in disorders producing large amounts of plasma proteins in the blood, including temporal arteritis (the ESR result is urgent for diagnosis), Polymyalgia rheumatica, juvenile arthritis and SLE. The ESR can take a long time to become raised or decrease with treatment and can be affected by many factors. PV will be affected rapidly and is not affected by gender, age or anaemia. The result and its non-specificity should never be used alone in diagnosis but always accompanied by other test results and clinical symptoms.

re-phrase the non-specific meaning of the result.

How would you prepare samples for testing and what/how do pre-analytical factors affect the accuracy of the results?

how much? 40µl

For ESR a minimum of 1.5ml of EDTA anticoagulated whole blood is required, PV requires only a small amount of blood (µl of EDTA anticoagulated blood). The sample must be labelled with three points of identification all matching that on the request card. The sample must be mixed to ensure homogeneity. Clotted samples cannot be tested and conditions such as lipaemia will affect the viscosity of the sample and thus alter the results, a more viscous sample will slow the rate of sedimentation falsely decreasing the ESR and altering the PV. Diluted samples (e.g. those taken from a drip arm) will also alter results of both PV and ESR due to the decrease in cell numbers and increased fluid.

U is confusing determining the you are referring to ESR or PV.

What are the limitations of the test and what further investigations would be required to overcome these?

what about temperature? →thermometer ESR use temperature as a correction factor when converti... a 30 minute result to a 60 minute result.

ESR and PV can only be calculated using EDTA anticoagulated whole blood. Whereas a PV result can be available in 20 seconds it may actually take approximately 2 minutes per sample to allow for rinsing time. ESR takes a minimum of 30 minutes. ESR is the gold standard but is easily affected by anaemia, gender and age; it also requires a minimum of 1.5ml blood. PV is a modern standardised equivalent to ESR that is less affected by factors such as age and gender and requires anywhere between 50µl and 1000µl. ESR should be tested within 24hours but PV can be measured on samples up to one week old. Examination of the sample can identify problems such as dilute, underfilled or clotted samples and a FBC (full blood count) can indicate the haemoglobin level which may be affecting the result.

do you mean insufficient? insufficient.

Explain the use of reference values and their clinical significance in the interpretation of abnormal results suggesting further tests as required.

Reference values are required in order to determine whether a patient result is normal or abnormal. Due to the effects age, gender and temperature have on ESR; in 1983 *Miller et al* devised an algorithm based on the Westergren method to define a normal range. This is still used on analysers today. However there are still differen... ranges dependent on gender and age. Abnormal PV and ESR results must not be used alone for diagnosis, but as confirmation alongside other test results and clinical details. A full blood count and blood film can be used to determine the presence of infection or

Thoughts?

What supravital stains do we use in haematology? Explain the principals and practice of staining blood cells by Romanowsky staining. Discuss the cellular component stained by the constituents of the Romanowsky stain and the impact of pH on the appearance of the red cells and the white cells.

The multiple stains are based on the Romanowsky stain is use in laboratory. Romanowsky used a mixture of old methylene blue and eosin to stain the nucleus of a malarial parasite purple and the cytoplasm blue. Subsequently, Giemsa modified the stain, combining methylene azure and eosin. The stain most commonly used in the UK is a combination of Giemsa's stain with May Grunwald stain, it is therefore designated the May-Grunwald-Giemsa (MGG) stain. The essential components of a Romanowsky-type stain are: (i) a basic or cationic dye, such as azure B, which conveys a blue violet or blue colour to nucleic acids (binding to the phosphate groups of DNA and RNA) and to nucleoprotein, to the granules of basophils and weakly, to the granules of neutrophils and (ii) an acidic or anionic dye, such as eosin, which conveys a red or orange colour to haemoglobin and eosinophil granules and also binds to cationic nuclear protein, thus contributing to the colour of the stained nucleus. A stain containing azure B and eosin provides a satisfactory Romanowsky stain as does a mixture of azure B, methylene blue and eosin. Staining must be performed at the correct pH. If the pH is too low, basophilic components for not stain well. Leucocytes are generally pale, with eosinophil granules a brilliant vermillion. If the pH is too high, uptake of the basic dye may be excessive leading to general over staining, it comes difficult to distinguish between normal and polychromatic red cells, eosinophil granules are deep blue or dark grey, and the granules of normal neutrophils are heavily stained, simulating toxic granulation.

Read the question and answer given here and consider…

Is it a good question?

Does it have too many components?

Is it clear what you are asking the trainee to answer?

Think about other ways to 'test' the trainee's knowledge about this...

Is the answer well-written?

Is it too well-written?

How would you describe the writing style?

Candidates must put evidence into their own words.

The answer in the previous slide has been copied from a textbook.

Plagiarism is not acceptable.

The candidate's training officer should pick this up.

If you don't have access to recognition software, enter the first 20 words into Google and see if it is recognised

Speak to your trainee but be sensitive- don't be confrontational.

eosin; the methylene blue has been heated, or 'polychromed', to produce analogues of methylene blue. Sometimes this is combined with Giemsa's stain to give a Wright–Giemsa stain, which is generally held to give superior results. It has been demonstrated by chromatography that dyes prepared by traditional organic chemistry methods are not pure, dyes sold under the same designation containing a variable mixture of five to ten dyes [30]. Variation between different batches prepared by the same manufacturer also occurs.

The essential components of a Romanowsky-type stain are: (i) a basic or cationic dye, such as azure B, which conveys a blue-violet or blue colour to nucleic acids (binding to the phosphate groups of DNA and RNA) and to nucleoprotein, to the granules of basophils and, weakly, to the granules of neutrophils; and (ii) an acidic or anionic dye, such as eosin, which conveys a red or orange colour to haemoglobin and the eosinophil granules and also binds to cationic nuclear protein, thus contributing to the colour of the stained nucleus. A stain containing azure B and eosin provides a satisfactory Romanowsky stain [29], as does a mixture of azure B, methylene blue and eosin [30]. The ICSH reference method for the Romanowsky stain [31], which uses pure azure B and eosin Y, gives very satisfactory results but such pure dyes are expensive for routine use. Satisfactory and reasonably consistent staining can be achieved using good quality commercial stains and an automated staining machine. This method has been used for staining the majority of blood films photographed for this book.

Traditionally, cytoplasm that stains blue and granules that stain purple have both been designated 'basophilic', and granules that stain violet or pinkish-purple have been designated 'azurophilic'. In fact all these hues are achieved by the uptake of a single basic dye such as azure B or A. 'Acidophilic' and 'eosinophilic' both refer to uptake of the acidic dye, eosin, although 'acidophilic' has often been used to describe cell components staining pink, and 'eosinophilic' to describe cell components staining orange. The range of colours that a Romanowsky stain should produce is shown in Table 1.2.

Staining must be performed at the correct pH. If the pH is too low, basophilic components do not stain well. Leucocytes are generally pale, with eosinophil granules a brilliant vermilion. If the pH is too high, uptake of the basic dye may be excessive leading to general overstaining, it becomes difficult to distinguish between normal and polychromatic red cells, eosinophil granules are deep blue or dark grey, and the granules of normal neutrophils are heavily stained, simulating toxic granulation.

Stain solutions may need to be filtered shortly before use, to avoid stain deposit on the blood film, which can be confused with red cell inclusions. If an automated staining machine is used, superior results are usually achieved with a dipping technique, in

Good annotations.

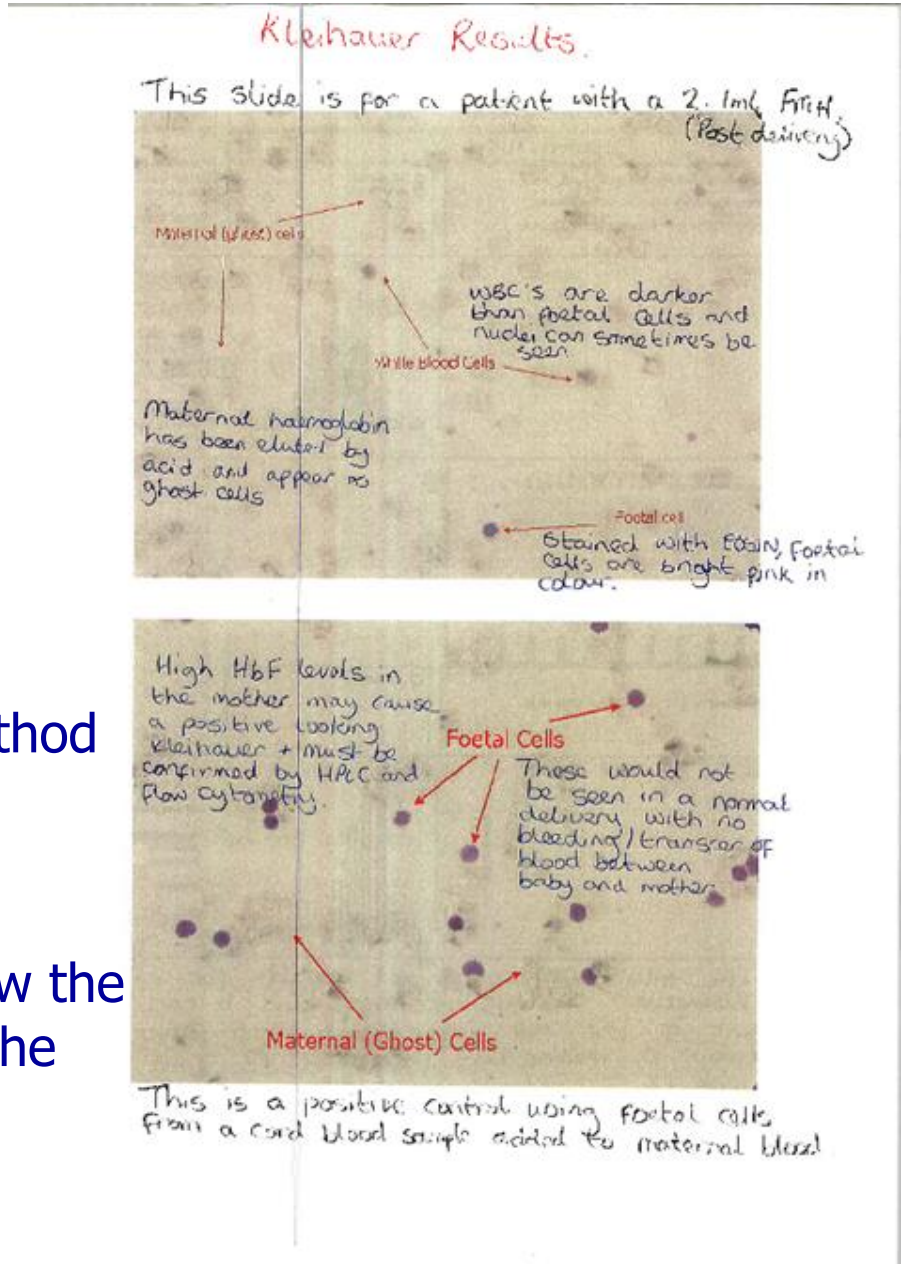
Good demonstration of candidate's understanding.

Commented on cell types

Commented on limitation of method

Identified as an abnormal result

Some feedback would be to draw the annotations further away from the images for clarity



No annotation.

No demonstration of candidate's understanding of the section they have underlined

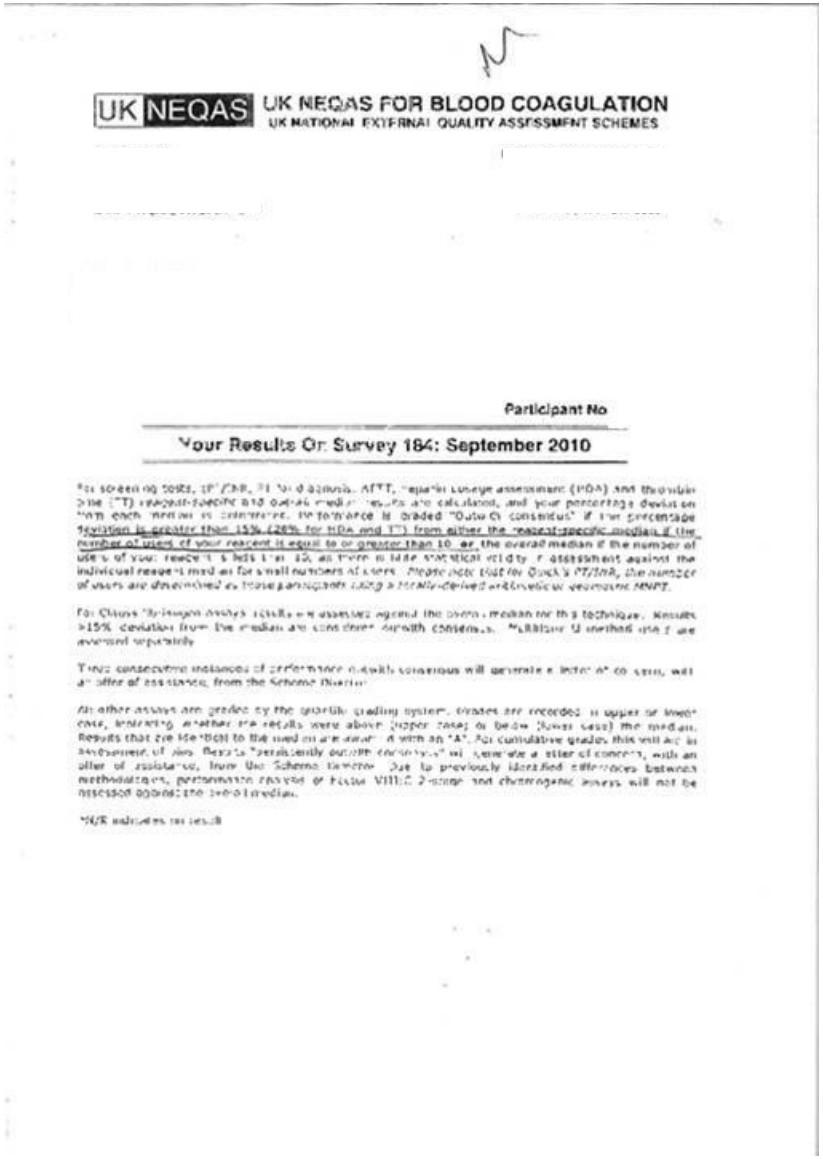
It is not clear why this has been included or for which standard.

In cases more subtle than this, the subject can be probed during the tour

In cases like this, further evidence must be produced- this piece has no value or context.

Some feedback would be to return to the trainee and request further context and annotation

Do not accept incomplete evidence such as this- it has no value and if the trainee cannot explain its value then remove it.



UK NEQAS UK NEQAS FOR BLOOD COAGULATION
UK NATIONAL EXTERNAL QUALITY ASSESSMENT SCHEMES

Participant No

Your Results Or Survey 184: September 2010

Describe the internal and external quality assurance procedures for the measurement of red cell folate.

Internal QC performed every 24 hours. Which cover at least one level of controls. Quality control results that do not fall within acceptable ranges may indicate invalid test results. For that reason there are 2 types of ranges been setup if the QC fall in yellow ranges (i.e. 2 standard deviation from the main). Re calibrates the analyser and than re run the QC. And if QC>30 from mean. Also needs to documents as well.

For external QC laboratory participates in NEQAS. Results can be submitted online. And than NEQAS will send us a copy of reports, which can be stored on Q-Plus. Previous NEQAS report attached.

This answer is not of a specialist level. There is a big difference between registration and specialist. Need to know subject in depth and have an understanding which allows critical thinking and troubleshooting.
Evidence from registration portfolio can be re-used, but it MUST be updated and linked to the specialist requirements.

Skills for trainers

- Excellent communication
- Generosity
- Understanding
- Ability to focus and isolate issues
- Positivity in all situations
- Confidence in interactions

Skills for verifiers

- Excellent communication
- Ability to focus and isolate issues
- Firm but fair
- Tact
- Confidence in decisions
- Professional but approachable