
 <b>NUS</b> National University of Singapore  <b>CIBA</b> Faculty of Science, Dept of Physic ,Centre of Ion Beam Applications	Procedure No:	CIBA/CSMS/04
Title: <b>CIBA Safety Multiple Choice Online Quiz</b>	Rev No:	0003
	Issue Date:	15 July 2009
Prepared by: Dr Ren Minqin	Approved by: A/P Thomas Osipowicz	Review Date: 01 April 2015

## 1. OBJECTIVE

This exercise is one of the requirements on the Safety Awareness Communication to Members and Visitor: Check List (Procedure No: CIBA/CSMS/02). The primary purpose of this online exercise is to raise the awareness and to instill a habitual consideration of safety among every user of *the laboratory*. Every user of *the laboratory* will have to do the online quiz and passing score is **90%**. The user need to endorse the document as an acknowledgement of his/her understanding of the content of this communication before the commencement of any experimental work in *the laboratory* in Safety Awareness Communication to Members and Visitor: Check List (Procedure No: CIBA/CSMS/02).

## 2. SCOPE

This Online Quiz is applicable to all existing and new researchers, graduate students, and personnel on attachment and Lab staffs.

## 3. RESPONSIBILITY

### 3.1 Principle Investigator

The PI has overall responsibility for ensuring the.

### 3.2 Staff/ Research personnel

Every user of *the laboratory* shall take part on this Safety Multiple Choice Online Quiz.



## 4. PROCEDURES

**4.1** Existing/ new personnel is encouraged to read Comprehensive Safety Management System (CSMS, Procedure No: CIBA/CSMS/01), Safety Awareness Communication to Members and Visitor: Check List (Procedure No: CIBA/CSMS/02), Standard Operation Procedures (SOPs) and Risk Assessments.

**4.2** Every user of *the laboratory* login into CIBA official website, <http://www.ciba.nus.edu.sg/>.

**4.3** Passing Score is 90%.

**4.4** The user need to endorse the document as an acknowledgement of his/her understanding of the content of this communication before the commencement of any experimental work in *the laboratory* in Safety Awareness Communication to Members and Visitor: Check List (Procedure No: CIBA/CSMS/02)

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## 5. Safety Multiple Choice Online Questions

### 1 What are the University Safety and Health policies?

- i. Legal compliance
  - ii. Mandatory Safety Training
  - iii. Occupational Safety and Health Management System and Programmes
  - iv. Implementation on Risk Assessment for experiment/equipment
  - v. Proactive Identification and Control of Hazards
  - vi. NUS Lab Design Standard
  - vii. Communication
  - viii. Incident and Accident Investigation
  - viii. Regular Review
- A. None of the above  
B. All of above except iv  
C. All of above except vi  
D. All of the above

### 2 What are the Physics Department Safety policies?



- i. Safety & Health
  - ii. Safety Compliance
  - iii. Environmental protection
  - iv. Innovation/Continual improvement
  - v. Risk Assessment for experiment/equipment
  - vi. Accident Prevention
  - vii. Training & Education
- A. All of the above  
B. All of above except v  
C. All of above except vi  
D. None of the above

### 3 Which legal requirement applies when a personnel conducts risk assessment for a particular project?

- A. Workplace Health & Safety (First Aid ) Regulations 2006
- B. Workplace Health & Safety (Risk Management) regulations
- C. Workplace Health & Safety (Incident Reporting) regulations
- D. Workplace Health & Safety (General Provision ) Regulations 2006

### 4 How many years is each review of risk assessment valid for?

- A. 1 year
- B. 3 years
- C. 5 years
- D. None of the above.

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- 5 When filling the Si(Li) detector dewar with liquid nitrogen, what should be done:
- fill the dewar with Liquid N<sub>2</sub>, close it tightly and wait for sufficient pressure to build up
  - carry out the procedure in a small room, and keep windows/doors locked
  - wear proper gloves and eye protection
- 6 When shouldn't you wear gloves:
- Before doing wet chemistry experiment
  - Before introducing samples into fridges
  - Before answering telephone
  - Before opening doors except the door into the clean room
  - Before handling liquid nitrogen
- I), II) & V)
  - III) & IV)
  - None of the above
  - All of the above
- 7 What is the correct procedure for pumping down the 10<sup>o</sup> beam line chamber
- Start the Turbo pump + roughing pump and wait for the pressure to reach  $1.8 \times 10^{-5}$  mbar then open the valve to the chamber. You can start and let the beam in.
  - Start the dry pump, pump out the chamber till the pressure is 2 mbar. Isolate the chamber and open the turbo pump to the chamber. You can start in 5 min from now.
  - Start the dry pump, pump out the chamber till the pressure is 0.2 mbar. Isolate the chamber and open the turbo pump to the chamber. Wait until the pressure has reached  $1.8 \times 10^{-5}$  mbar and press the reset button. You can start and let the beam in.
  - Start the dry pump, pump out the chamber till the pressure is 0.02 mbar. Isolate the chamber and open the turbo pump to the chamber. You can start and let the beam in.
- 8 After the beam is in the chamber, what should be the status of the dry pump
- On
  - Off
  - Does not matter
- 9 What does PPE stand for?
- Personal Protective Equipment
  - Personal Physical Examination
  - Pens and Pencil Equipment
  - Physical Platelets Enzymes
- 10 Why do we need PPE?
- So as to protect ourselves from harm during experiments and work
  - So as to avoid causing the lab to close down
  - So as to comply with the safety regulations in NUS
  - So as to look more professional
  - So as to comply with laws workplace safety acts
- 11 What are the steps for cleaning a chemical spill?

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- i) Assessment
- ii) Cleaning
- iii) Decontamination
- iv) Containment

- A. i>ii>iii>iv
- B. iv>iii>ii>i
- C. i>iv>ii>iii
- D. i>ii>iv>iii
- E. iv>ii>iii>i

12 License is necessary for \_\_\_\_\_.

- i) Class 1 laser
- ii) Class 2 laser
- iii) Class 3a laser
- iv) Class 3b laser
- v) Class 4 laser

- A. i) and ii)
- B. ii) and iii)
- C. iii) and iv)
- D. iv) and v)

13 Why must you remove any jewellery or other metallic items worn on the hands, when conducting experiments with lasers?



- A. Because fashion and science never go together
- B. Because such items can heat up and cause burns
- C. Because such items could scatter the laser radiation into the eyes
- D. Because such items are known to have a low Fermi energy that will cause unsafe electron emissions when exposed to the laser
- E. Because such items can get entangled with the photons causing an unknown quantum state

14 The Radiation Protection Act was enacted in 1991 to regulate, by means of licensing and penalty, the importation, manufacture, sale, transport, keeping and use of radioactive materials and irradiating apparatus. Which of the following apparatus are NOT covered by the act (Non-ionising Radiation)?

- A. Microwave ovens
- B. Medical and industrial ultrasound apparatus and Magnetic resonance imaging (MRI) Apparatus
- C. Ultraviolet sunlamps
- D. Entertainment lasers, High power lasers
- E. None of the above

15 Which of the following licenses are required to use class 3b & 4 high power medical and industrial lasers and all classes of entertainment lasers?

- A. N4a

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- B. N4b
- C. N3,
- D. N2
- E. N1

16 When working with lasers, it's necessary to take various precautions in order to ensure your safety. Which of the following statements is not true?

- A. Laser radiation should be discharged in a background that is non-reflective and fire resistant.
- B. Looking into primary laser beam should be avoided at all times, and equal care should be exerted to avoid looking at specula reflections of the beam, including those from lens surfaces.
- C. Laser work should be carried out in areas of high general illuminations to keep pupils constricted; thus, limit energy that might inadvertently enter the eyes.
- D. Warning sign should be attached to laser equipment in a conspicuous location indicating the potential eye hazard associated with laser.
- E. None of the above.



17 Which of the following statement(s) is (are) correct about safety in CIBA lab:

- i. One should be familiar with operating procedures before working in the accelerator lab.
  - ii. Don't cross safety barriers.
  - iii. To know high radiation areas.
  - iv. There is no radiation in the accelerator lab.
- A. i) and ii)
  - B. iii) and iv)
  - C. i), ii) and iii)
  - D. ii), iii) and iv)

18 In case of any emergency (within NUS), what number should you call?

- A. ext. 62815
- B. ext. 61818
- C. ext. 61515
- D. 68741616

\*Please email your answers to [phyrenmq@nus.edu.sg](mailto:phyrenmq@nus.edu.sg)

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**Answers:**

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
- 9.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
- 16.
- 17.
- 18.