

Singapore Junior Biology Olympiad - Pre registration briefing

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Rationale

- ▶ Top 3 for IBO in recent years
- ▶ Many IBO alumni, students and schools have requested this competition
- ▶ Create similar opportunities for young students of Biology

Objectives

- ▶ Better prepare students for IBO by giving them an earlier taste of the competition
- ▶ More opportunities for young students to challenge themselves

Structure

- ▶ Theory test (online)
 - ▶ Late May
- ▶ Practicals (with presentation)
 - ▶ Late August/Early September

Theory (overview)

- ▶ Done completely online
- ▶ Links specific to each student will be given to schools
- ▶ Schools administer in computer labs
- ▶ Declaration **MUST** be signed and adhered to

Theory (structure)

- ▶ Mix of multiple choice, T/F, fill-in-the-blanks
- ▶ Weightage:
 - ▶ 35% 'O' level standard
 - ▶ 35% 'A' level standard
 - ▶ 30% IBO standard

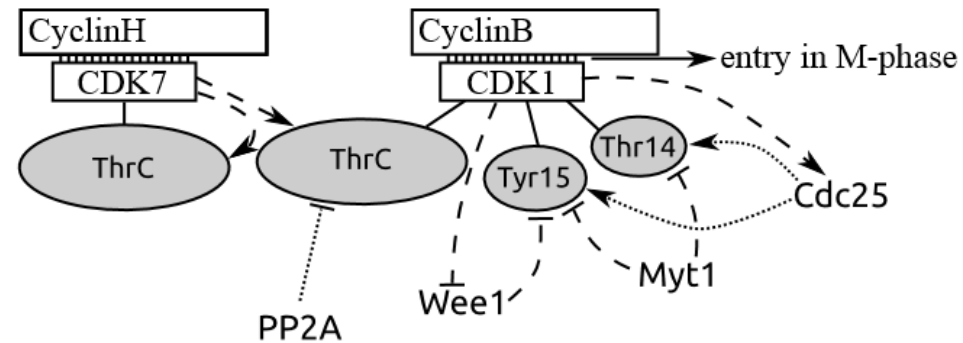
Theory (administration)

- ▶ Hotline will be available for troubleshooting
- ▶ Schools will be given a half-day window during which links will be accessible
- ▶ Each student has 2 hours after first accessing the link
- ▶ Students who have completed the exam must be kept in quarantine until all students from the school has finished the exam
- ▶ Failure to conform will result in the whole school's disqualification

Sample Questions

Progression through the cell-cycle is mediated by Cyclin-Dependent Kinases (CDKs), which become active only when bound to their respective cyclin and phosphorylated at the ThrC (core threonine). Phosphorylation or dephosphorylation of other amino acids further modulates their activity. The following pathway represents the proteins involved in the entry into the M-phase of the cell-cycle.

	activation	inhibition
phosphorylation	--->	---
dephosphorylation>



Indicate if the following mutation would promote entry into the M-phase by activating the CyclinB/CDK1 complex.

A mutation that reduces the dephosphorylating activity of Cdc25.

False 8

Sample Questions

In animal behavior a sign stimulus could trigger a fixed action pattern (FAP). Which of the following is NOT an example of sign stimulus-FAP?

- A. Some moths fold their wings and drop to the ground when they detect an ultrasonic signal from bats.
- B. **A wasp finds its nest according to the surrounding objects.**
- C. A newly hatched bird cheeping loudly in begging for food when its parent returns to nest.
- D. Breeding mayflies lay eggs when they detect water.

Sample Questions

In a population of animals in Hardy-Weinberg equilibrium, 25% display the recessive phenotype. What proportion of the animals are heterozygous?

(Fill in the blank qn)

0.5, 0.50, 50%

Practical (overview)

- ▶ Top five schools (based on the top 4 performers from each school)
- ▶ 4 team members 1 reserve
- ▶ Takes place in Science Centre Singapore
- ▶ Students will have to give a presentation afterwards

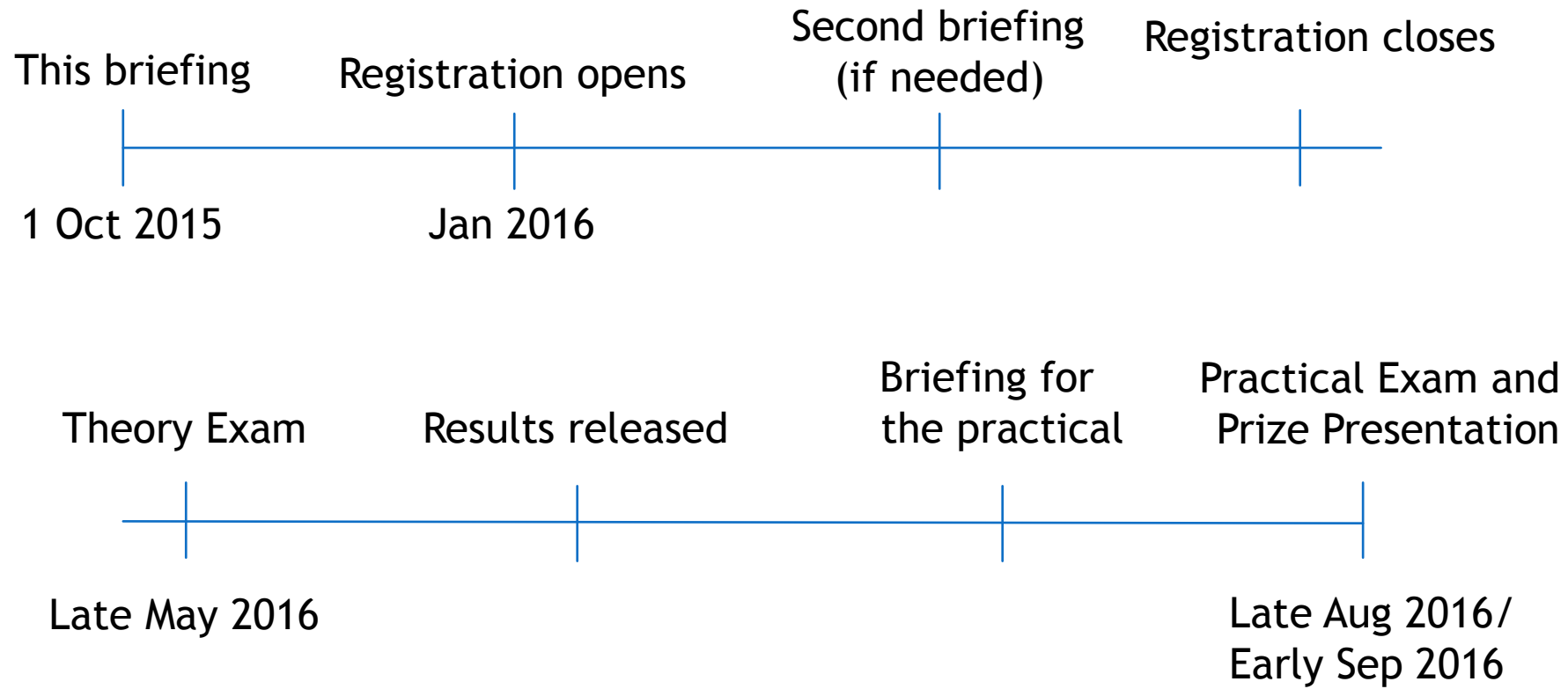
Practical (structure)

- ▶ Tentatively - 2 hours
- ▶ Some skills from IBO tested
- ▶ Does not follow IBO's format

Practical (administration)

- ▶ IBO alumni will be watching over the students during the test
- ▶ All helpers have/will have signed an NDA
- ▶ Each team will need to bring two camera hand phones (SIM cards have to be removed beforehand)

Timeline



Procedure

- ▶ A link will be posted on the SIBiol website (an email will be sent out once this is done) Once registration opens, input name list and submit
- ▶ \$20 per student
- ▶ During theory, a half day window will be provided during which schools are to administer the exam
- ▶ More details will be released once confirmed
- ▶ Please email: sjbo2016@gmail.com for enquiries

Awards

▶ From theory:

- ▶ Top 5%, Gold medal
- ▶ Next 10%, Silver medal
- ▶ Next 15%, Bronze medal

▶ From practical:

- ▶ Champion (school)
- ▶ 1st runner up (school)
- ▶ 2nd runner up (school)