0. Preamble:
0.1. The African Mathematical Union Commission on the Pan African Mathematics Olympiads (AMUPAMOC) has published new PAMO regulations, applicable from January 1, 2001. These regulations cover matters that do not change from year to year. If a host country wishes to vary any of them, they must obtain the agreement of the AMUPAMOC beforehand.
0.2. In addition to these permanent regulations, each year the AMUPAMOC, in consultation with the Local Organizing Committee (LOC) of the current PAMO, will make procedures relating to:
• The place and dates of the current PAMO
• The date by which official acceptance of the invitation to participate must be received
• The date by which participating countries must send information about team leaders and team members
• The date by which problems proposed for the competition must be received by the LOC
• The official program of the Olympiad
0.3. The 28th Pan African Mathematical Olympiad PAMO (incorporating the Pan African Mathematical Olympiad for Girls PAMOG) will take place in Monastir, Tunisia from 21 to 30 March 2020.
0.4. The official languages of PAMO/PAMOG are French and English.
0.5. During the past working session of the Jury of PAMO 2003, the members discussed the ranking by country and agreed that for future editions of PAMO the ranking by country should be determined by the
total number of points of all the members of the team, even if the team consists of fewer than the allowed members.

1. Participation in PAMO 2020

1.1. Participation in PAMO/PAMOG is by invitation only.
1.2. Each invited country wishing to participate in PAMO/PAMOG 2020 must send an official acceptance, which must be received on or before January 31, 2020 to:
   • Prof Solarin Adewale, President, AMUPAMOC (asolarin2002@yahoo.com)
   • Prof Monia Bouzouita, PAMO 2020 LOC Chairperson (bouzouita.monia@gmail.com)
1.3. The registration to PAMO 2020 should be done through the PAMO Website: http://africamathunion.org/AMU-pamo-official.php /A username and password will be provided by the webmaster to the team leader of each country having expressed interest to participate to PAMO 2020

2. Teams

2.1. Each country is entitled to send to the host country, a team consisting of a Team Leader and at most six (6) official pupils (at most 3 boys & at most 3 girls).
2.2. Each country may also send a Deputy Team leader any number of unofficial contestants, subject to the fees laid out in 3.2.3.
2.3. The team leader must be a mathematics teacher at the secondary or tertiary level.
2.4. Each contestant must be less than twenty (20) years old on the day of the second examination paper.
2.5. Contestants must not be enrolled in any post-secondary institution.
2.6. Each participating country must provide their contact details: postal address, phone number, and e-mail address.
2.7. Each participating country must provide, on or before February 15, 2020, the list of its team members to both the LOC Chair and AMUPAMOC President.
2.8. The team leader of each participating country can be assisted by a deputy leader to supervise the welfare of the team. The deputy
leader may not attend the working sessions of the Jury.

3. **The responsibility of the host and the participating countries**

3.1. The responsibility of the host country:

3.1.1. The host country covers accommodation, meals and local transport costs of:

- The team leader and the official team members of each participating country.
- The representatives of the African Mathematical Union, in particular the President and/or the Secretary General of AMU, the President of the AMUPAMOC and the Mediator of PAMO/PAMOG 2020.
- The Mathematics Olympiads specialists invited by the AMUPAMOC in agreement with the LOC.

3.1.2. The host country covers the travel costs of:

- The Chairman of the Jury for PAMO (the President of AMUPAMOC)
- The Chairman of the Problems Committee (the Mediator)
- The invited specialists.
- Members of the Problems committee.

3.1.3. The host country takes care of all the Olympiad necessities; it awards medals, prizes and certificates of participation and appreciation honorarium, gifts or souvenirs to officers in 3.1.2.

3.1.4. The host country provides a guide for each participant country to supervise the welfare of the team.

3.2. The responsibility of the participating countries:

3.2.1. Participating countries are responsible for all the travel costs of their team to and from the Host country.

3.2.2. Participating countries are also responsible for the fees payable, denoted as follows in Euros:

- Observer A (observer with Team Leaders): 600 Euros for a shared room, 1000 Euros for a single room.
- Observer B or Deputy Team Leader: 500 Euros for a shared room, 800 Euros for a single room.
- Observer C (observer with contestants): 400 Euros for a shared room

3.2.3. Participating countries are also responsible for a fee of 500 Euros payable for each unofficial contestant.
3.2.4. Deputy Team Leader, observer and unofficial candidate fees must be transferred to LOC bank account.

4. The Mediator
4.1. The AMUPAMOC appoints for each PAMO and for the term of one year a Mediator, who must be an African mathematician who is a prominent member of the AMU and has a good experience of PAMO.
4.1.1. The appointed Mediator for PAMO 2020 is Professor Nouzha El Yacoubi, President of the African Mathematical Union.
4.2. The Mediator must be fluent in both official languages of PAMO: English and French
4.3. The Mediator is required to:
   • Collects a bank of Mathematics Olympiads Problems and to make it available to the Problems Committee (see 6).
   • Participates in the various working meetings.
   • Provides mediation before and during the coordination process, in case of disputes between team leaders and coordinators.

5. Mathematical Problems for PAMO 2020
5.1. Submission of problems:
5.1.1. Every member of AMUPAMOC is required to propose at least three problems each of 1 hour 30 minutes duration with solutions for the Olympiad.
5.1.2. Each country taking part in the Olympiad is required to submit six problems of 1 hour 30 minutes duration with solutions for the Olympiad.
5.1.3. Each problem submission must contain two separate files: one with only the problem statement, and another with the problem statement with solution.
5.2. The problems must cover, as far as possible, different areas of Algebra, Geometry, Combinatorics, and Number theory and should be of different levels of difficulty. The problems must be submitted in English or in French.
5.3. The problems must be sent to the PAMO 2020 Mediator, Professor Nouzha El Yacoubi, with a copy to the AMUPAMOC President before February 29, 2020. Problems submitted after the deadline will not be accepted.
IMPORTANT: Submission of PAMO Proposed Problems, is an obligation for each team leader participating in PAMO 2020, not just a choice left at his/her convenience.

6. PAMO 2020 Problems Committee
6.1. The Problems Committee of the PAMO 2020 will include:
• As Chairman: The Mediator of PAMO 2020
• As members:
  • The AMUPAMOC President
  • The PAMO 2020 LOC Chairperson
  • Two invited specialists
6.2. The Problems Committee members will meet on March 21 – 23, 2020 in order to work on the Problems proposals received before the deadline, and to recommend the short list of 15 to 20 problems, which will cover, as far as possible, the different areas of Algebra, Combinatorics, Geometry, and Number Theory.

7. The Jury
7.1. The Jury is composed of the AMUPAMOC President, the PAMO 2020 LOC Chairperson, the PAMO 2020 Mediator, the member of the AMUPAMOC from the host country (if applicable), and the team leaders of the participating countries.
7.2. The invited specialists and the observers may attend the Jury but do not have the right to vote.
7.3. The Jury is chaired by the AMUPAMOC President.
7.4. Each team leader must be proficient in one of the two official languages of PAMO, English and French, and must be able to translate the selected problems into the official language of his or her team.
7.5. The Jury has the responsibility to select 12 problems from the short list recommended by the Problems Committee.

8. The Supervising Committee
8.1. The Supervising Committee is composed of the AMUPAMOC President, the PAMO LOC Chairperson, the PAMO Mediator and the
8.2. For PAMO 2020, these are:
• AMUPAMOC President: Prof Adewale Solarin
• PAMO 2020 LOC Chairperson: Prof Monia Bouzouita.
• PAMO 2020 Mediator: Prof Nouzha el Yacoubi
• AMUPAMOC secretary: Dr Karam Aloui

8.3. The Supervising Committee has the responsibility of choosing 6 problems from the 12 selected by the Jury for the current Olympiad.

8.4. The Supervising Committee has responsibility for setting the question papers and resolving any problems of coordination.

9. Marking and Coordination
9.1. The AMUPAMOC in agreement with the PAMO 2020 LOC will appoint a team of six coordinators who will meet with the Jury when the final selection of six problems has been made and the marking schemes are drawn up.

9.2. Each problem will be awarded a mark (a whole number between 0 & 7 inclusive)
9.2.1. The solutions of the contestants will initially be assessed by their team leader.
9.2.2. The team leader will present the solutions of the contestants to a coordinator, and a final score for each question will be agreed upon in accordance with the marking scheme.
9.2.3. The scores will be recorded on an official form and signed by the team leader and the coordinator.
9.3. If the team leader and the coordinator fail to agree on a score for a contestant, the matter will be referred to the Supervising Committee whose decision shall be final.

10. Prizes
10.1. The host country awards medals, prizes and certificates of participation
10.2. Medals
10.2.1. Medals for PAMO contestants: Gold Medals, Silver Medals and Bronze Medals will be awarded in approximately the ratio 1:2:3; the exact total point thresholds for each kind of medal will be decided by the Jury. The total number of medals awarded will not be more
than half of the number of contestants.

10.2.2. Medals for PAMOG contestants: Gold Medals, Silver Medals and Bronze Medals will be awarded in approximately the ratio 1:2:3; the exact total point thresholds for each kind of medal will be decided by the Jury. The total number of medals awarded will not be more than half of the number of contestants.

10.2.3. The top female contestant by total number of points will be crowned “African Mathematics Queen 2019”

10.2.4. Medals for countries: Countries will be ranked by taking the sum of the total scores of all their team members. The team leaders of the top three countries will be awarded Gold, Silver and Bronze Medals.

10.3. Special prizes may be awarded for solutions considered outstanding by the Jury.

10.4. Each contestant who has not won a medal will receive a certificate of Honorable Mention if he or she has scored full marks (7) for at least one problem.

10.5. The host country must provide certificates of participation for all the contestants who took part in the Olympiad, and special certificates for the winners of Gold, Silver or Bronze Medals, Honourable Mentions and special prizes.

10.6. All the certificates should be co-signed by the AMUPAMOC President and PAMO 2020 LOC Chairperson.

11. Gifts

11.1. Each participating country is encouraged to bring gifts of a cultural nature to be exchanged with participants from other countries.

12. Syllabus

12.1. There is no official syllabus. The problems must cover, as far as possible, different areas of interest of pre-university education, in particular Algebra, Geometry, Number Theory, and Combinatorics.

12.2. Problems must be original. Students must be able to solve them only with basic arguments without referring to sophisticated theoretical knowledge.
13. Deadlines:
• **01 February 2020**: Deadline of notification of participation in PAMO 2020, which must be received by the AMUPAMOC President, and the PAMO 2020 LOC Chairperson.
• **15 February 2020**: Deadline of receipt of the list of the teams’ members by PAMO 2020 LOC Chairperson.
• **15 February 2020**: Deadline of receipt of the problems proposals for PAMO 2020 by the PAMO 2020 Mediator with a copy to the AMUPAMOC President.

14. Opening and Closing Ceremonies Template

**OPENING CEREMONY PROGRAMME**
National Anthem
Welcome - Address – Chairman, LOC
Introduction of teams (parade)
Pledge by contestants
Pledge by team leaders
Speeches:
Chief Executive of Host Organisation
Chair AMUPAMO
President, AMU or Representative
Government Official – To declare the Contest Opened.
Hosting of the PAMO flag.
National Anthem
End of Ceremony.

**CLOSING CEREMONY PROGRAMME**
National Anthem
Welcome LOC, Chairman
Speeches
President AMU or Representative
Chief Executive of Host Organization,
President, AMU-PAMOC : Report on PAMO Conduct
Secretary, AMU-PAMOC: Announcement of Results.

**Award of Medals**
Honorable mention (Representatives of Deputy Team Leaders)
Bronze: PAMO & PAMOG (Representatives of Team Leaders)
Silver: PAMO & PAMOG (Representatives of AMUPAMOC)
Gold: PAMO & PAMOG (Chairman LOC, Representative of Host Organization & Sponsors)

Award of Country Trophies:
3rd (Main Sponsor)
2nd (Representatives of Government)
1st (President AMU).
President AMU declares the Contest Closed;
LOC hands over the PAMO flag to next Host Country.

15. PAMO/PAMOG 2020 Agenda

<table>
<thead>
<tr>
<th>Date</th>
<th>Event</th>
<th>Location</th>
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<tbody>
<tr>
<td>Sat 21 March 2020</td>
<td>Arrival of the Problem Committee members, AMUPAMOC President and the Mediator First Working session of the problem committee</td>
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<td>Sun 22 March 2020</td>
<td>Second Working session of the problem committee</td>
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<tr>
<td>Mon 23 March 2020</td>
<td>Third Working session of the problem committee Arrival of teams</td>
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<td>Tue 24 March 2020</td>
<td>Jury working session</td>
<td>Excursion for contestants, deputy team leaders etc.</td>
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<td>Thu 26 March 2020</td>
<td>Jury meeting Excursion for the Problem Committee and Jury</td>
<td>Paper I</td>
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<td>Date</td>
<td>Event</td>
<td>Paper</td>
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<tr>
<td>Fri 27 March 2020</td>
<td>Jury meeting</td>
<td>Paper II</td>
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<td>Marking scheme: Paper I</td>
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<td>Marking of Paper I</td>
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<td>Sat 28 March 2020</td>
<td>Coordination of Paper I</td>
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<td>Coordination of Paper II</td>
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<tr>
<td>Sun 29 March 2020</td>
<td>Final Jury meeting</td>
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<td>Closing and Prize giving Ceremony</td>
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<td>Mon 30 March 2020</td>
<td>Departure</td>
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