	MINISTRY EDUCATION, CULTURE, RESEARCH AND TECHNOLOGY <b>UNIVERSITAS NEGERI JAKARTA</b> FACULTY MATHEMATICS AND KNOWLEDGE KNOWLEDGE NATURAL <b>MAJOR PHYSICS &amp; EDUCATION</b> <b>PHYSICS</b> Campus A UNJ Rawamangun, G-d. Hasjim Asj'arie Lt. 5 Jl. Rawamangun Advance No. 1 Jakarta 13220 Tel. 021-29266285/29266284	<b>EXAM MIDDLE SEMESTER 118</b>	
		<b>PHYSICS STATISTICS</b>	
		<b>Date and time</b>	Thursday/30 March 2023
		<b>O'clock</b>	13.00-14.40
		<b>Place</b>	203, 204, Labkom
		<b>Study Program</b>	Physics Education
		<b>Characteristic</b>	Bring notes 1 lbr quarto
<b>Lecturer</b>	Dr. Anggara Budi Susila, M.Sc		

**Do the questions in lower This**

1. Function distribution point stated in function exponential as following:

$$f(x) = 0,4. e^{-0,02x^2}$$

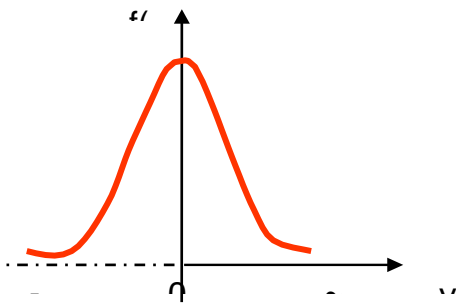
Based on function the distribution, use function Gamma For determine:

30%

- $\langle x \rangle$
- standard deviation ( $\sigma$ )

2. In a room with a temperature T there are N gas particles scattered throughout room. Particle probability with rate between  $v_x$  and  $v_x + dv_x$  formulated:

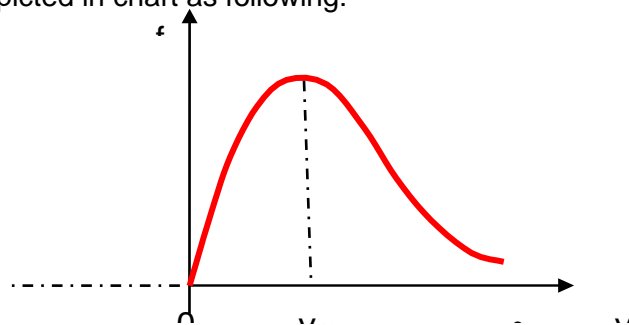
30%



- is  $\frac{1}{\sqrt{2\pi}} e^{-\frac{v^2}{2}}$
- Rate And energy kinetic each particle, as well as give explanation in a way physical.

3. For example, in a heating room there are N gas particles distributed in the following way Maxwell's equations. If the particle probabilities are distributed with a rate between  $v$  and  $v + dv$  depicted in chart as following:

40%



where  $\xi$  is a constant,  $N_A$  = number Avogadro and  $R$  = general gas constant Determine:

- How many mark point culmination from function distribution rate in on
- big energy in system (U)
- constant Laplace ( $\gamma$ ) if temperature room the in condition currently.

*Note: After your answers are uploaded, work on these UTS questions again and submit them to the class head, then the class head sends the results to [anggorobs1960@yahoo.com](mailto:anggorobs1960@yahoo.com) on April 3 2023.*