Sri Siddhartha Institute of Technology, Tumkur

(A constituent college of Sri Siddhartha Academy of Higher Education,Tumkur)

BSPH104: Engineering Physics

Date: 08/02/2021 **TEST1** Time: 2:15-3:15 PM

Q.No		Marks	CO	BL
1	Define forced vibration and derive an expression for amplitude and phase in case of forced vibration.	10	1	1
2	State and explain Hooke's law.	5	1	1
3	Describe the experiment to prove that a superconductor is a perfect diamagnet.	5	2	2
4	Define young's modulus, Bulk modulus, rigidity modulus and poisson's ratio.	5	1	1
5	Calculate the resonant frequency for a simple pendulum of length 1 m.	5	1	3

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SUB: Engineering Physics **SUB CODE**: BS-PH104

Date: 04/03/2021 **TEST-2** Time: 2:15-3:15 PM

Q.No		Marks	CO	BL
1	Find the energy eigen value and energy eigen function for an electron in 1-d infinite potential well.	10	3	1
2	Define shock wave and mention any four applications.	5	2	1
3	What is Mach number? Distinguish between subsonic, transonic, supersonic and hypersonic based on Mach number.	5	2	1
4	Calculate the speed of sound in Helium gas at 350 K. Given γ for Helium is 1.667and R=2008 J/Kg/K.	5	2	3,4
5	An electron is bound in a 1-d infinite potential of width 1Å. Find its energy values in the ground state and also in first two excited states.	5	3	3,4

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BS-PH104: Engineering Physics

SEM-1
SEC-A, B, C, D & E

TEST-3

Duration: 1 hr
Max. marks=20

Q.no.		Marks	CO	BL
1.	Derive an expression for Energy density at thermal equilibrium in terms of Einstein's co-efficients.	10	4	5
2.	With the help of a block diagram, explain the point to point communication system using optical fibers.	5	4	5
3.	The refractive indices of core and cladding are 1.50 and 1.48 respectively in an optical fiber. Find the numerical aperture and angle of acceptance.	5	4	3

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BS-PH204: Engineering Physics

SEM-2-2020-21 TEST-3 Time: 60 minutes

SEC-F, G, H, I & J Max. marks=20

Q.no.		*Marks*	*CO*	*BL*
1.	With the help of a block diagram, explain the point to point communication system using optical fibers.	*5*	*4*	*5*
2.	The refractive indices of core and cladding are 1.50 and 1.48 respectively in an optical fiber. Find the numerical aperture and angle of acceptance.	*5*	*4*	*3*
3.	Derive an expression for Energy density at thermal equilibrium in terms of Einstein's co-efficients.	*10*	*4*	*5*